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GEE'S DISEASE*

By T. Izod Bennett, M.D., F.R.C.P. Lond.
PHYSICIAN WITH CHARGE OF OUT-PATIENTS, MIDDLESEX HOSPITAL

Two years ago a young girl was admitted to the Middlesex Hospital. The first thing noticeable was the great deformity of her bones; the legs were bowed and there was considerable displacement at both knee-joints. The lower epiphyses, particularly those of the radii, were notably enlarged. The ribs were beaded. The mother said that all her life this child had suffered from a tendency of her bones to bend or break. She was 17 years of age when admitted to hospital and all her life had never been able to run, although at times she had been able to walk. When she was 2 years old her left humerus bent one night in bed; at the age of 3 she was said to have rickets. At the age of 14 osteotomies had been performed on both femora and the legs were straightened, but they bent at once as soon as she started to walk again. Several times she broke bones but they mended very quickly. Her mother said that she thought that she was better in recent years because her bones tended to break instead of merely bending.

The next striking thing about this patient was that her abdomen was very distended. All her life this had been so; when she was a baby she had had frequent attacks of diarrhœa with very large and offensive stools, but after the age of 5 she never had diarrhœa although the stools remained large and pale. The abdomen gradually became more distended until, when she was in hospital, this was most noticeable.

Another thing apparent about the patient was that the fingers and toes were clubbed, and a further point was that she was pale and evidently anæmic. She said that sometimes she got cramps in her arms and legs and whenever she was examined Chvostek's sign was found to be positive. Last year this patient died of a macrocytic anæmia of pernicious type.

The case therefore exhibits four main features: (1) bony deformities resulting from imperfect calcification, amounting to osteomalacia; (2) steatorrhœa; (3) latent tetany; and (4) a tendency to develop severe and dangerous anæmia.

In London and in the southern counties of England, and perhaps in Paris as well, it is probably true to say to-day that abnormalities of bony development such as adolescent rickets are seldom, and osteomalacia never, due to defective diet only.

The student of modern medicine seeing a patient with bony deformities such as those which have just been described tends immediately to suspect the presence of hyperparathyroidism, because that remarkable disease has created so much interest throughout the medical world. In reality a case of bony deformity beginning in a young person is not likely to arise from hyperparathyroidism, and the two diseases most important in this respect are renal insufficiency and Gee's disease.

Characteristics of the Disease

In 1888 Samuel Gee, physician to St. Bartholomew's Hospital, gave the first accurate description of what he called "the cœliac affection," a diarrhœal disease chiefly affecting children but sometimes seen in adults, very chronic in nature and tending to be accompanied by a failure of growth and characterised by large pale stools containing much fat. Knowledge of this disease has been increased by numerous observers in many countries. It is usually recognised as a disease of young children but may not infrequently be encountered in adolescents and adults. A few years ago Donald Hunter, Janet Vaughan, and I were able to collect and make full study of 15 cases of this disease, all of them in patients over 15 years of age, and since the publication of these observations I have encountered several others. All have certain outstanding symptoms and signs of which the most prominent are: (1) steatorrhœa, sometimes causing diarrhœa; (2) anæmia of various types; (3) tetany, either acute or latent; and (4) infantilism with bony changes varying from late rickets to true osteomalacia.

STEATORRHŒA

In nearly every case a history may be obtained of chronic diarrhœa recurring frequently during early childhood and perhaps still existing in adult life, but when the disease has been present for many years it is more likely that the stools will no longer be frequent although they will remain conspicuous by their size and pallor. Chemical examination will then show that fat, in the form of fatty acids and soaps, is present in the fæces in large amounts. The reason why diarrhœa disappears although steatorrhœa persists is that in the course of time these cases develop a dilatation of the colon which slows the passage of the fæces and permits of fuller absorption of water. In some of the early cases the stools are conspicuous by their gassy nature, and it is probable that the dilatation of the colon is to a large extent produced by the bulk of the fæcal material and the distension caused by gas production. Attention has been called to dilatation of the colon present in the case first quoted. X ray examination showed large coils of colon which, when injected with barium, was found to contain 3½ litres without discomfort to the patient. Although this dilatation of the colon abolishes the diarrhœa, steatorrhœa persists. Table I. shows the chemical analysis of seven cases on a diet

TABLE I.—*Analysis of Fæces in Seven Cases*

Case No.	Total fat.	Unsoaped fat.	Neutral fat.	Free fatty acid.	Combined fatty acid.
1	63·9	30·8	2·9	27·9	33·1
2	56·2	19·9	7·2	12·7	36·3
3	61·1	22·0	5·8	16·2	39·1
4	50·7	31·6	4·7	26·9	19·1
5	59·5	33·6	21·3	12·3	25·9
6	60·4	51·8	42·2	9·6	8·6
7	68·3	41·7	7·0	34·7	26·6

somewhat low in fat but not completely fat-free, and it will be seen that nearly half of the dried fæces are composed of this material and further, that it is nearly all in the form of split fat, suggesting that the action of the pancreas is not seriously at fault.

Certain writers, particularly Bramwell, have believed that these cases are essentially examples of pancreatic deficiency, whilst others such as Cheadle have thought that the liver is the organ at fault. Neither of these hypotheses is accepted to-day, and the general belief is that the fundamental error is one of absorption rather than of lack of secretion by any of the alimentary glands. Another group of workers has maintained that in these cases fat is absorbed by the intestine but is subsequently re-excreted from the blood into

* A lecture delivered at the Hôpital Claude Bernard, Paris, in June, 1934.

the colon. The evidence for this theory is chiefly that even on a starvation diet there remains a large amount of fat in the fæces and, therefore, re-excretion must be at work. Against this theory must be taken the important observations of Sperry and Bloor who have shown that in normal animals there is almost as much fat in the fæces on a fat-free diet as on one containing fat, and that the nature of the various fractions is similar under the two conditions. At the present time the theory of non-absorption appears to be the most probable explanation of the steatorrhœa in Gee's disease.

ANÆMIA

Nearly all these cases show some degree of anæmia and many of them show it in extreme degree, so that the pallor of protected surfaces contrasts with the tanning which follows exposure to the sun. The anæmia that may occur is of at least three varieties :—

(1) A *hypochromic anæmia*, in which the number of red cells may be normal and the hæmoglobin diminished, or both elements may be reduced, but the hæmoglobin is always more reduced than the number of red cells. Thaysen found hypochromic anæmia in 20 out of 29 patients, and Whipple and others have found this type of anæmia similarly common. Of my own cases it has been conspicuous in only two. This type of anæmia responds well to the administration of large doses of iron.

(2) A *megalocytic hyperchromic anæmia*, in which there is a notable diminution both in the number of red cells and in the percentage of hæmoglobin, but this reduction is greater as regards the cells than in the latter element. Megalocytes appear sometimes in large numbers, and in the case quoted at the beginning of this paper this anæmia appeared so suddenly and with such severity as to cause death. Usually this anæmia can be treated successfully either by large doses of yeast extract (Marmite) or by liver extract. The appearances of the blood are closely similar to those of true Addisonian pernicious anæmia, but differ in that poikilocytosis is less marked, and the indirect van den Bergh reaction is low, and further, the patients differ in that they often show free hydrochloric acid in the gastric secretion and can be cured by the administration of marmite; this is seldom if ever the case with true pernicious anæmia.

(3) *Erythroblastic anæmia.*—In two of my cases there was present a severe anæmia with great reduction of the hæmoglobin and enormous numbers of nucleated red blood-cells which were present in one case in the proportion of 200 per 100 leucocytes. In addition both megalocytes and microcytes were present although the colour-index was very low. This blood picture closely resembles that described by Cooley in America in certain severe anæmias in children of Mediterranean stock. Our cases were of purely English stock, but presented a curious triangular shaped head, with high forehead, prominent malar bones, and widely set eyes very suggestive of the appearances of the children described by Cooley.

These cases resembled the other patients observed by Hunter, Vaughan, and the writer in that they had steatorrhœa, osteoporosis, and latent tetany.

TETANY

The case described at the beginning of this paper exhibited latent tetany as shown by the presence of Chvostek's sign, and several of the patients in the series described by Hunter, Vaughan, and myself came under observation on account of acute tetany with carpopedal spasm. More than one of them had been obliged to give up work on account of the persistence and severity of this symptom; one, a teacher of the piano, had found herself entirely unable to follow her occupation; another case, more recently under my observation, gave a vivid description of attacks in which she was unable to move her hands, swallowing became painful and difficult, and even vision was obscured until calcium was administered by her medical attendant.

For such reasons examples of Gee's disease are not infrequently encountered in neurological clinics where the tetany is being investigated, and sometimes the other manifestations of the disease are overlooked. In such cases the presence of chronic steatorrhœa and the prominence of the abdomen will supply evidence as to the origin of the tetany, and close examination will usually reveal changes in the skeletal system such as are present in practically all cases of Gee's disease.

The great Trousseau mentions chronic diarrhœa as a cause of tetany, but the first report of the association of fatty stools and tetany in an adult appears to be that of Sonrier in 1877. Since that time this association has been noted by a number of observers, and Langmead in 1911 published extensive observations on such cases, making particular note of the extreme distension of the colon which occurs in many of them. Lichtenstein, Blumgart, and Holmes and Starr must be quoted amongst other observers who have paid attention to this condition. Table II. shows the manifestation of tetany in my own cases,

TABLE II.—*Tetany in Relation to Serum Calcium*

Case No.	History of acute tetany.	Chvostek sign.	Trousseau sign.	Serum calcium.
1	+	+	—	8·6
2	—	+	—	8·7
3	—	+	—	8·0
4	—	—	—	9·8
5	+	—	—	9·0
6	—	+	—	9·0
7	+	+	+	7·5

and it will be seen that in all cases it was associated with reduction of the serum calcium. These calcium figures are average figures from a large number of observations in each case, and it may be said that hypocalcæmia, often of severe degree, is one of the most outstanding biochemical features of Gee's disease.

INFANTILISM, RICKETS, AND OSTEOMALACIA

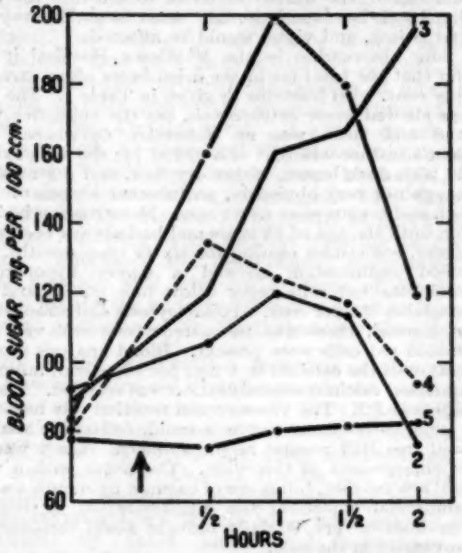
In his original description of "the cœliac affection" Gee noted the interference with growth that occurs in children with this disease, but the first description of osteoporosis and the occurrence of fractures appears to be that of McCrudden and Fales in 1912. Subsequently, Parsons, Miller, and other English observers emphasised the occurrence of rachitic changes in children, the former particularly having given a full description of the condition, including the beneficial therapeutic effects of vitamin D. Holst first recorded the occurrence of severe bone changes amongst examples of this disease in adults, and similar cases were reported by Linder and Harris and by Thaysen.

All the adolescent and adult cases seen by the writer have exhibited osteoporosis, many have first come under observation on account of adolescent rickets, and stunting of growth is almost invariable. In a few instances the softening of bone was of such degree as to constitute true osteomalacia, and it is perhaps notable that this was most marked in the oldest patient in the series.

This was a woman now aged 60, who has had attacks of severe diarrhœa at intervals during practically the whole of her life. At the age of 12 her legs were bowed, and this

and other deformities have increased and still tend to occur at the present time. At the age of 34 she married and later became pregnant and was very ill, the pregnancy terminating in miscarriage after three months. She is very poor and during the last ten years there have been times when insufficient food has increased the severity of her general disease. X ray photographs demonstrate the severity of the osteoporosis in her case, the pictures of the pelvis being typical of the contracted pelvis of osteomalacia so often described and so seldom explained by gynæcologists.

Information as to the calcification of the bones in these cases is best obtained if radiograms are taken to show the bones of the patient and the bones of a control healthy patient of the same age and build photographed simultaneously on the same film. In this manner the decalcified bones of the patient with Gee's disease are clearly demonstrated.



Glucose-tolerance curves: (1) from a case of pancreatic insufficiency (carcinoma of the pancreas); (2) from a case of pernicious anæmia with chronic diarrhœa; (3) from a case of amœbic dysentery with severe diarrhœa; (4) from a case of chronic pancreatitis; and (5) from a case of tropical sprue. Glucose (50 g.) was given by mouth at the point indicated by the arrow.

Metabolic Observations

Description has already been given of some of the interesting biochemical features of this group of cases. It has been seen that the absorption of fat is seriously at fault, but there is evidence that the disturbance of metabolism involves many other substances. Thaysen, to whom we owe much of our knowledge of this disease, was the first to report that in many cases the administration of glucose is not followed by the usual increase of sugar in the blood. If one gives 50 grammes of glucose to one of these patients when fasting, the analysis of samples of blood taken at half-hourly intervals afterwards will usually reveal no increase in the sugar content of the blood, but a "flat curve," if such an expression is permissible, very different from any ordinary result either in health or disease.

Two possible explanations suggest themselves for this result: (*a*) that sugar is absorbed much more slowly than in any ordinary person; or (*b*) that sugar is removed from the blood by the liver with extreme rapidity. There seems to be little to support the latter theory, and most observers are of opinion that this phenomenon demonstrates interference with the absorption of sugar similar to that which we have already observed in the case of fats. It is seen in about 80 per cent. of established cases and I know of no other disease in which it is to be found except tropical sprue. My investigation of this phenomenon in cases of steatorrhœa from pancreatitis both benign and malignant, and similar observations on cases of pernicious anæmia with severe diarrhœa, and also on cases of dysentery, has not revealed the flat blood-sugar curve. It would therefore seem that neither diarrhœa nor steatorrhœa can explain it.

Protein metabolism is not so obviously disturbed. The matter is one more difficult to investigate, and Herter, Lehndorff, Maunner, and others have reported diminished nitrogen metabolism with a high nitrogen content in the fæces. It can certainly be said that the blood-urea is never high and that it is sometimes rather low in these cases, but beyond this nothing definite can be said at the present time.

Calcium

With reference to the tetany so often met with it has been stated that these cases, and indeed all cases of Gee's disease, usually show a low serum calcium. Herter, who was one of the first to study these problems, was certainly the first to call attention to the excessive loss of calcium in the fæces in the form of soaps. He and many observers since have estimated the calcium balance in such patients, and have demonstrated that there is a very large loss of calcium in the fæces and a very small output in the urine. The loss of calcium in the fæces seems to run parallel with the loss of fat. Whether these two deficiencies are inter-related or whether there is a simple failure of absorption in both cases has not yet been proved. The theory that calcium is absorbed and subsequently re-excreted into the colon does not, however, appear tenable.

What has been said of calcium applies in a large measure to phosphorus. Biochemical methods at the present time are not sufficiently perfected to enable us to speak with the same certainty regarding phosphorus as we can with regard to calcium, but the evidence is that the phosphorus in the blood is low and that this is associated with phosphorus-loss via the alimentary canal.

The Nature of Gee's Disease

Leaving these laboratory details we are confronted with the problem of the exact pathology of Gee's disease. In the first place it must be admitted that the findings at autopsy throw little light upon the mystery. The wall of the small intestine and of the colon is usually thin and atrophic, the pancreas and liver do not appear to be grossly diseased, and no disease of other internal organs has yet been established. The bones show the changes of rickets or osteomalacia; they are often so soft that they can be cut with a blunt knife and are of the consistency of Gruyère cheese; but these facts must be considered as effects rather than as causes.

We are driven to the study of somewhat analogous diseases in order to reach a conception of the pathology of the present one. It cannot be said that there is any real evidence to suggest that disease, or functional derangement, of the parathyroid apparatus is present in these cases.

Table III. sets out the main features of hyperparathyroidism and hypoparathyroidism as compared with Gee's disease, and it at once becomes manifest that the low serum calcium of the latter condition contrasts markedly with the hypercalcæmia of cases of parathyroid tumour, whilst the absence of changes in the bones and the normal alimentary function in

conditions of hypoparathyroidism are entirely different from the state of affairs in Gee's disease.

Consideration of the steatorrhœa, of the peculiar glucose-tolerance curve, of the frequent presence of

TABLE III.—*Comparison of Gee's Disease with Parathyroid Excess and Deficiency*

—	Hypoparathyroidism.	Gee's disease.	Hyperparathyroidism.
Serum calcium ..	Low.	Low.	High.
Plasma phosphorus	High.	Variable.	Low.
Urinary calcium ..	Low.	Low.	High.
Bone changes ..	Nil.	Marked.	Very marked.
Alimentary function	Normal.	Deranged.	Normal.
Tetany	Present.	Frequent.	Absent.

achlorhydria, of the hypocalcæmia, and of the various types of anæmia found in Gee's disease lead to the conclusion that this must be a nutritional disturbance of intestinal origin in spite of the failure of the pathologists at the present day to demonstrate specific anatomical lesions.

The diseases most closely analogous to Gee's disease are probably that group of anæmias in which achylia gastrica is the basis. True Addisonian pernicious anæmia is the chief member of this group, with microcytic anæmia and the anæmia of gastrocolic fistula as rarer and more ill-defined members. In these diseases we often find gastro-intestinal disturbance sometimes with diarrhœa, although seldom with steatorrhœa; we find anæmias of varying severity and a bodily disturbance which is widespread, although hypocalcæmia and such effects as osteoporosis and tetany are practically never described.

In the tropical disease known as sprue a great many features are found practically identical with Gee's disease. In sprue we encounter steatorrhœa, severe anæmias, often macrocytic in type, hypocalcæmia and tetany in a considerable number of cases, and osteoporosis, although this is somewhat rare and always mild in degree. Gee recognised that his disease closely resembled certain cases of tropical diarrhœa, but made it clear that it occurred in persons who had never left England. The chief distinction between the two conditions lies in the fact that whereas Gee's disease can nearly always be traced to infancy, tropical sprue scarcely ever arises before later years of life. There are other points of distinction: the stools in tropical sprue tend to be more fluid and foaming, and are often described as having the consistency of soda-water; extreme soreness of the mouth with superficial ulceration of the tongue and buccal mucous membrane is a very common and outstanding manifestation of sprue and is very rare in Gee's disease. Although the ætiology of sprue remains obscure there are many things pointing to infection as an important factor, whereas in Gee's disease this element does not appear probable.

NON-TROPICAL SPRUE

Many writers, particularly Thaysen, have believed that Gee's disease and sprue are identical, and the disease has been described as "non-tropical sprue." In the 15 cases examined by Hunter, Vaughan, and myself, only one presented any strong evidence as to having arisen later than in early childhood. Since the publication of this series a further most interesting case has come under my observation.

A. B., a woman aged 21 (M.H. Reg. No. 53043).—This patient had no diarrhœal disease whatever during infancy. She was a normal breast-fed baby, and during the first ten years of her life had whooping-cough, measles, and chicken-pox, but was never seriously ill. Growth was good and her attendance at school was never interrupted for longer than a fortnight. This story is entirely corroborated by the parents and teachers of the patient.

At the age of 14 she began to get attacks of abdominal distension with pale voluminous stools which have continued ever since. She very quickly observed that fatty food of any type increased the diarrhœa, and sometimes provoked actual vomiting. Within a year she began to suffer from severe cramps in the hands which made her feel "as if she were holding an electric battery." She went to work as a milliner and the stiffness of her hands would sometimes prevent her from following her occupation. Dr. A. P. Bodman of Bristol identified the condition as one of tetany and elicited Trousseau's sign. He found the blood calcium very reduced and identified the diarrhœa as being due to steatorrhœa. He instituted a low fat diet and with the administration of calcium brought about considerable improvement. If she neglected to take her calcium, tetany would affect her so severely that her fingers would stiffen, the thumb would be locked into the palm of her hand, her breath would "seem to go," her eyelids would twitch, and vision would be affected.

Under observation in the Middlesex Hospital it was found that the total fat in the dried fæces often exceeded 50 per cent. with fractions as given in Table I. The long bones showed some osteoporosis, but the epiphyses were united and there was no deformity anywhere. The patient's stature was that of a girl of 15; she was of slight build with dark brown, rather dry hair, and a somewhat, although not very obviously, protuberant abdomen. The mouth and tongue were never sore. Menstruation had not begun until the age of 18 years and had always been most irregular, sometimes ceasing for six or nine months.

Blood examination showed a severe hypochromic anæmia, the red cells being below four million and the hæmoglobin 34 per cent. Poikilocytosis and anisocytosis were marked, there was no macrocytosis and very few nucleated red cells were present. Blood analysis showed reduction of the calcium to 8 mg. per 100 c.cm., falling to 6 mg. when calcium administration was stopped. Plasma phosphorus 3·2. The Wassermann reaction was negative, the glucose-tolerance curve normal. Gastric analysis showed free HCl present in the stomach. There was no gross enlargement of the colon. Treatment with a very careful low fat diet, full doses of calcium by mouth and by intramuscular injection, the administration of Blaud's pill in doses of grs. 90 daily brought about considerable improvement in the case.

The chief scientific interest of this case is that it seems clearly to support the contention of Thaysen and others that Gee's disease may occasionally arise in patients in Western Europe during adolescence or even in adult life. It must, however, be noted that soreness of the mouth was completely absent in this case and the character of the stools was not like that usually encountered in true sprue.

Treatment

Gee's disease calls for prolonged and energetic treatment. The majority of patients will develop severe symptoms unless they are kept on a diet in which the fats are rigidly curtailed. Details of such a diet would be unsuitable here, but it is well to point out that skimmed milk is a very useful ingredient and that ripe bananas are also of great value. If gas-formation is prominent starch must be kept low; the administration of takadiastase in such cases is very valuable.

Indication has already been given in this paper concerning the treatment of the various forms of anæmia. If iron is called for it is best given in the form of massive doses of Blaud's pill, up to grs. 90 daily, or one of the scale preparations of iron in doses of grs. 150 a day may be employed. The hypodermic injection of iron preparations is almost without value. If the anæmia is macrocytic in type marmite or yeast extracts may relieve it, but the use of liver extract, or of Campolon by hypodermic injection, will be

equally or more effective. If the anæmia is of dangerous degree blood transfusion must be employed.

Calcium administration is called for in nearly every case. About grs. 120 of calcium lactate should be given daily as a routine, and if the blood calcium is very low or manifestations of tetany are present this should be increased and a more soluble form of calcium such as the gluconate should be given in addition, by the intramuscular route if necessary. Apart from tetany the osteoporosis, which is almost always present in adult cases in some degree, calls for massive administration of calcium if further deterioration of the bones is to be prevented.

Conclusion

Exception may be taken to the title of this paper. Gee himself described the disease as "the cœliac affection," but cœliac disease is now almost universally looked upon as a disease of early infancy, and this name has the further disadvantage of directing attention to only one of the clinical features of the malady. "Non-tropical sprue" is a title seeming to have even less to commend it, whilst "idiopathic steatorrhœa" will become, it may be hoped, an obsolete description when pathologists have thrown more light on the disease. The credit of first recognising the condition must without question be given to Gee. The later and independent discoveries of Herter, and the still later publications of Heubner, scarcely justify the addition of their names to that of the great physician of St. Bartholomew's Hospital.

Many of the observations recorded in this paper have been made for me by colleagues in the Courtauld institute of biochemistry and the Bland-Sutton institute of pathology at the Middlesex Hospital and to them I wish to express my great indebtedness. I must also thank Dr. Donald Hunter and Dr. Janet Vaughan for permission to reproduce the results of certain investigations which have been carried out sometimes by them alone and sometimes in collaboration with them.

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UVEO-PAROTID TUBERCULOSIS

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THE association of inflammatory lesions of the uveal tract and of the parotid glands was first recorded by Heerfordt [1] 24 years ago, and since then some fifty papers have been published on the subject. The condition appears to be uncommon, but in our previous review [2] we suggested that for various reasons many cases are not recognised. Since our paper was published we have met with two further cases which we now report.

Most of the patients are in the second and third decades of life, with a slight preponderance of females. Premonitory symptoms of various kinds occur in half the cases, none of these being in any way specific. Parotitis is constant, nearly always bilateral, the swelling being firm, nodular, and painless, and subsiding in a period varying from days to months. Bilateral uveitis is present in every case, and usually takes the form of iridocyclitis, often with nodules in the iris recognisable as tuberculous and showing a great tendency to the formation of synechiæ and keratitis punctata; the ocular lesions frequently relapse and tend to leave permanent changes which may, rarely, result in blindness. Half the patients develop facial palsy, unilateral or bilateral, always followed by recovery. Mild pyrexia also occurs in half the cases, and a smaller proportion show polyneuritis, xerostomia, polyuria, lacrymal gland involvement, joint pains, and erythema—often diagnosed as erythema nodosum. The condition pursues a chronic course with a marked tendency to spontaneous recovery, the mortality being about 5 per cent. Some of the earlier cases were thought to be examples of mumps, but this is untenable in view of the long prodromal period, the indolence and painlessness of the parotid swellings, the fact that facial palsy may precede the parotitis, the absence of orchitis, and the occasional history of previous infection. Other suggested causes include syphilis, leukæmia, and tuberculosis, but we showed in our review that all the evidence is in favour of tuberculosis

FIG. 1.—The tuberculide over the shins in Case 1.

as the sole ætiological factor, and suggested that the syndrome should be known as uveo-parotid tuberculosis. Microscopically the tuberculosis is of a peculiarly fibrosing and non-caseating type, in which the tubercle bacilli are very scanty and difficult to demonstrate, either by animal inoculation or by histology. The chronicity and tendency to spontaneous recovery undoubtedly stand in close relationship to these features. It is a remarkable fact that in two of the four cases which have come to autopsy the myocardium was the seat of a similar fibroid tuberculous process.

REPORT OF TWO CASES

CASE 1.—A female, aged 31, was admitted to the Leeds General Infirmary on Nov. 8th, 1932, under the care of Prof. MacAdam. She was the third child of a family of eight; an elder sister had had tuberculous cervical adenitis at the age of 22, and three had died in childhood from a cause unknown. She had been delicate all her life, having suffered from pneumonia, whooping-cough, and bilateral otitis media as a child; she had not had mumps. She had always suffered from dysmenorrhœa, and for the past year there had been amenorrhœa. She had been slightly deaf in both ears for the past two years. The present illness was preceded by an attack of "influenza" in December, 1931, when she was ill for two weeks; there was a similar attack two months later, and a third in April, 1932; after this last attack her previous good health did not return, and she suffered from lassitude, anorexia, and loss of weight. On August 16th she noticed pain in the eyes; five days later a painless swelling of the neck developed, and on August 27th a diagnosis of mumps was made. The parotid swelling, which was bilateral, subsided about five weeks later, and during this period she complained of severe backache. On Sept. 16th one side of the face was seen to be drawn over, this being particularly noticeable when she spoke. She continued in this condition until Oct. 23rd, when she found that she was unable to stand or walk; a few days later she developed weakness of the hands. During the course of the illness there had been progressive failure of vision and progressive deafness.

FIG. 2.—Section of one of the lesions in Fig. 1. A typical tubercle follicle with giant cell is seen in the corium.

On admission the patient was pale, wasted, apathetic, and obviously very ill. The urine contained a few pus cells and excess of acetone bodies. The temperature was 99° F., the pulse-rate 140, and the respiration-rate 40. The eyes were examined by Mr. J. Benson; they showed subacute iritis, and the fundi could not be seen owing to vitreous haze; there was no keratitis punctata; visual acuity was reduced to perception of finger movements. The pupils were unequal and fixed, and there was marked conjunctivitis. The palpebral apertures were unequal (right larger than left), and there was complete paralysis of the right lower face. The ears were examined by Mr. W. M. Munby, who reported bilateral middle-ear deafness and bilateral (incomplete) nerve deafness; a tuning-fork (128) was not heard by air conduction. The mouth was extremely dry, and the patient complained of severe thirst. Both arms showed almost complete paralysis and loss of muscle tone, all the tendon jerks were absent, and there was marked ataxia of sensory type. The legs were not so weak as the arms, though she was unable to raise either leg from the bed; tone was very much reduced, and the tendon jerks were absent. The abdominal reflexes were absent and the plantar responses flexor. Pain sensation was impaired over a "glove and stocking" distribution, and vibration sense was impaired at the ankles; position sense in the fingers and toes was very defective. There was slight painless enlargement of the parotid glands. Over the anterior aspect of both legs below the knees there was an erythematous rash consisting of infiltrated, circular patches about the size of a sixpence (Fig. 1); Dr. J. T. Ingram pronounced this rash as being undoubtedly a tuberculide. Radiography revealed some calcified glands in the right iliac fossa, but the only abnormality in the chest was a thickened interlobar septum on the right. The blood Wassermann reaction was negative. The blood count showed: leucocytes, 5700 (differential count normal); red cells, 5,510,000; hæmoglobin, 96 per cent.; colour-index, 0·87. Fractional test-meal showed hypochlorhydria with delayed acid secretion and normal emptying-rate. The von Pirquet test (0·001 mg.) was positive. Electrocardiography showed nothing abnormal.

During the following three weeks she remained extremely ill; there was persistent tachycardia, though the temperature was raised on only three occasions (to 100° F.), and there was a tendency to looseness of the bowels. After this she began to improve, and at the time of discharge on Dec. 3rd there was considerable recovery of power in the limbs; there was still complete anorexia, and there had been no improvement in vision or in hearing. The rash had become brown in colour, but before this a biopsy had been performed, a single circular nodule being excised. Part of this material was used for guinea-pig inoculation, but neither of the animals developed tuberculosis. The rest was examined microscopically, and showed a typical, active tuberculous lesion of the dermis extending down to the adipose tissue and not undergoing caseation (Fig. 2); no tubercle bacilli were seen. For various reasons a biopsy was not performed on the iris or the parotid glands, nor was sialography carried out.

She was re-examined at home on April 7th, 1933. The appetite was still poor, the mouth was very dry, there was no return of the menses, and she had not put on any weight; at the same time she felt that she was improving slowly, especially with regard to the nervous manifestations. There had been further failure of vision and of hearing. The eyes were again examined by Mr. Benson, who found posterior synechiæ, the pupils being dilated and fixed (she had been treated with atropine); there was marked ciliary injection and keratitis punctata on the left; the fundi could not be seen. The palpebral apertures were still unequal, and there was slight facial weakness. She could not hear a tuning fork by air conduction, and was almost completely deaf. The tongue was not very dry. The limbs were extremely wasted and tone was reduced, but there was a considerable return of power and coördination was not impaired. Position and vibration sense were now normal, and the upper abdominal reflexes had returned. The rash had completely disappeared leaving no scarring.

She was readmitted to hospital on July 15th, when the iritis was still active and keratitis punctata was increasing. It was now decided to give her a course of gold therapy, and krysolgan (gr. 0·015) was given intravenously on July 22nd with no noticeable general

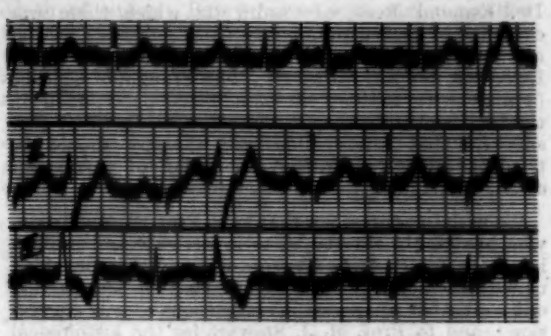

FIG. 3.—Electrocardiogram showing extrasystoles of right ventricular origin.

or focal reaction. Increasing weekly doses were given, and there was no reaction until gr. 0·75 was reached, when she complained of vague general symptoms, but from the commencement of the treatment there was a steady improvement of both hearing and vision. She was re-examined at home on Sept. 1st when she was able to see large objects and could hear a tuning fork (256) by air conduction; there was no facial weakness and the tendon jerks in the arms were obtained with difficulty. All the abdominal reflexes were present, as were the knee-jerks; there had been one menstrual period, the first for 18 months. In October there was a second menstrual period, and she stated that there was an improvement in vision after each injection of krysolgan. Keratitis punctata was now well marked in both eyes, the pulse-rate was 100, and the ankle-jerks were obtained for the first time; she had now received about grs. 4 of krysolgan.

About the end of November, 1933, her general condition relapsed, and she complained of cough, dyspnœa, and palpitation; she was re-examined and found to have a rapid and very irregular pulse; a loud systolic bruit had appeared at the apex, together with another adventitious sound thought to be a friction rub. There were no abnormal signs in the lungs. The electrocardiogram now showed very numerous extrasystoles of right ventricular origin (Fig. 3), and radiographs revealed numerous small infiltrations distributed uniformly throughout both lungs, reported by the radiologist as typical miliary tuberculosis. She was admitted to hospital, and for two weeks the temperature was normal, though the pulse-rate varied from 84 to 130, usually being irregular. At the end of this time there was some general improvement, and the patient returned home. She was seen again on several occasions between December, 1933, and June, 1934, during which time her general condition continued to improve and her weight increased from 5 st. 7 lb. to 7 st. At the last examination visual acuity was 6/18 right, 6/36 left, and keratitis punctata was much less marked; there was no cough but she still complained of dyspnœa and palpitation; the pulse-rate was still rapid and slightly irregular. Repeated electrocardiographic examination showed persistent but less frequent extrasystoles. Radiography demonstrated increase in the density of the shadows but there was no further extension. Sialography showed no abnormality of the right parotid duct, and saliva was being secreted freely but in subnormal quantity.

CASE 2.—For the notes of the second case we are indebted to Mr. R. S. Lawson, of Leicester, the case being brought to our notice by Dr. John Campbell. This was a female aged 54 who was seen by Mr. Lawson in July, 1931. There was an eight weeks' history of swelling of both sides of the neck, that on the left starting a week after the right; left facial palsy came on suddenly after three weeks, and then gradually recovered. When first seen there had been "inflammation of the left eye" for two or three days and she complained of an unpleasant taste in the mouth. There had been no contact with mumps. On examination the parotid glands were enlarged, movable, and painless, and there was complete left facial palsy; there was left-sided conjunctivitis with epiphora. The Wassermann reaction was negative. A biopsy was performed on both parotid glands under general anæsthesia, and the material showed typical tuberculosis histologically; tubercle bacilli could not be found in the sections, however, in spite of the most careful searching. She was discharged at the end of July, the general condition having improved, with a diagnosis of bilateral tuberculous parotitis. She was readmitted a few months later with bilateral iritis, the cause of which was not understood. Subsequently, at our request, Mr. Lawson was good enough to have the chest and abdomen radiographed and an electrocardiogram taken; the report states that there are "changes in the chest affecting principally the right upper and middle zones, together with considerable mediastinal adenitis, and opacities are present in the right sacral region suggestive of calcified glands." The electrocardiogram showed no abnormality. Mr. Lawson kindly sent us the sections made from the parotids, and Prof. M. J. Stewart reports on them as follows. *Left parotid:* the portion of the gland excised shows an advanced tuberculous lesion throughout. All the gland lobules are similarly affected, the lesion consisting of innumerable well-formed tubercle follicles with large, typical giant cells, and a small amount of peripheral lymphocytic infiltration. Central necrosis is conspicuously lacking. Tubercles are also present in the walls of the ducts, the lumina of which are free from involvement (Fig. 4). No tubercle bacilli are seen in appropriately stained sections. A few tubercles are also seen in the fibrous septa but for the most part these are not invaded although they appear to be rather wider than normal. The glandular acini are widely separated by the tuberculous infiltration, and a few of them are filled with homogeneous pink-stained material. There is no appreciable increase of collagen within the substance of the gland lobules. The tuberculous lesion is recent and active. *Right parotid:* this shows an exactly com-

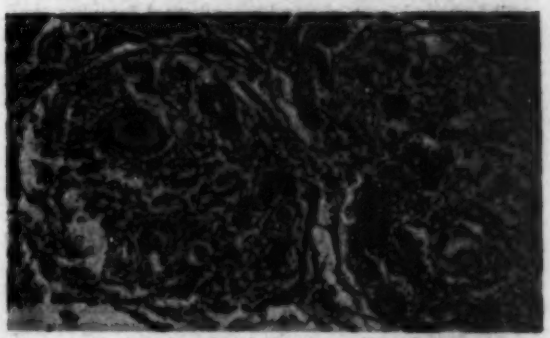

FIG. 4.—Section from left parotid in Case 2, showing numerous tubercle follicles breaking up the glandular tissue.

parable lesion at apparently the same stage of development. Again there are only one or two small tubercles present in the septa, and the vessels and nerves running therein are unaffected.

We have communicated with this patient, and she reports that she is now normal in every way.

COMMENTARY

These are two typical examples of uveo-parotid tuberculosis. Case 1 shows several points of interest. In the first place she developed the most severe polyneuritis so far recorded in this syndrome, and she was further remarkable for the bilateral nerve deafness, which was probably of neuritic origin, an integral part of the polyneuritis. This polyneuritis was so generalised and severe that it dominated the

clinical picture, and we can well understand how Macbride,[3] in reporting a similar case, ventured to call the condition uveo-parotitic paralysis. Our analysis of the reported cases, however, clearly demonstrated that this is not a common accompaniment of the syndrome. We have no doubt that the cause of the polyneuritis in this case was the tuberculous toxin circulating in the blood; all the usual causes of polyneuritis could be excluded, and the case demonstrates that polyneuritis can result from tuberculous infection in cases other than those in the last stages of consumption, a fact which is not yet generally accepted. We do not suggest that there was actual bacillary infection of the nerves, but believe that the neuritis was of purely toxic origin as are, according to modern views, many of the skin tuberculides such as the one occurring in this case. As far as we know nerve deafness has only been recorded once before.[3] The marked general disturbances in this patient fall into line with the extensive polyneuritis, the two being manifestations of a profound tuberculous toxæmia, and although the focal parotid lesion was not notable the uveitis was very severe.

There is no doubt that towards the end of November, 1933, the patient developed myocardial disease, evidenced by dyspnœa and palpitation associated with tachycardia, frequent ventricular extrasystoles, and an apical systolic bruit. In view of the autopsy finding of extensive myocardial tuberculosis in two previous cases,[2] we venture to suggest that the myocardial lesion in this case is also of tuberculous origin. In our previous paper we suggested that tuberculous myocarditis might occur in this disease without producing gross physical signs and, further, that it might be followed by recovery; we believe this to be such a case. Coincident with this, pulmonary infiltration occurred in lungs previously clear, and must be regarded as tuberculous.

The second case showed no unusual features, and went on to complete recovery; again the tuberculous nature is undoubted because of the radiological evidence and the histology of the affected parotids. We would emphasise that the microscopical appearances of the biopsy material in both these cases are identical with those we have previously studied—namely, our own first case [2] and those of Dorrell [4] and Souter.[5]

We should like to refer to a case of this condition which was reported by Mohn [6] about the time our first paper appeared.

> This was a female, aged 28, who had had mumps as a child, had suffered from erythema nodosum for ten years, and in whose family there was a strong history of tuberculosis. She was admitted to hospital as a case of tuberculous peritonitis, but four days later she developed bilateral facial palsy and, after three weeks, bilateral enlargement of the parotid and lacrymal glands. The cerebro-spinal fluid showed a slight increase in the cell content. After another week bilateral deafness and other neurological signs developed, including weakness of the limbs, loss of tone, diminution of the tendon jerks, and Rombergism, and about the same time there was bilateral uveitis with photophobia and failure of visual acuity, corneal opacity, and iris nodules. The parotid and lacrymal swellings subsided but the cervical and submaxillary glands became enlarged. She was febrile for one month, and while the paresis improved the uveitis increased. The von Pirquet test was positive. During the course of the illness an area of infiltration appeared in the left upper lobe, said to be characteristically tuberculous; for this reason no attempt was made to produce a focal reaction to tuberculin.

Mohn considered this case—which is in every way typical of uveo-parotitis with polyneuritis and strikingly similar to our own first case (above)—to be of tuberculous origin.

In conclusion, we would suggest that this condition is not very uncommon, and in further support of this we have heard of three more recent cases, one seen by Dr. Esmond Rees, of Cardiff (in which there was evidence of healed pulmonary tuberculosis as well as a tuberculide), another by Dr. S. E. Tanner, of Leicester, and a third by Dr. John Stough, of Chicago (a male with uveitis, parotitis, facial palsy, rash on the legs, and pulmonary tuberculosis). Our first case suggests that intravenous gold therapy should be tried in all cases for the prevention of permanent ocular damage, if for no other reason.

We wish to express our thanks to Prof. W. MacAdam, who has kindly allowed us to investigate and publish his case; to Mr. R. S. Lawson, who not only provided us with the notes and slides of his case but also carried out a number of special investigations at our suggestion; and to Prof. M. J. Stewart for the histological report.

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UVEO-PAROTITIS POLYNEURITICA

REPORT OF A CASE

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UVEO-PAROTITIS polyneuritica (febris uveo-parotidea of Heerfordt) is an uncommon syndrome characterised by inflammatory lesions of the uveal tract of the eye, enlargement of the parotid glands, facial palsy (commonly unilateral, but occasionally bilateral), and fever. The syndrome may occur at any age (commonest in young adults and slightly commoner in females). Frequently there is a short prodromal period in which skin rashes may appear. In spite of the name given by Heerfordt, fever is not essential, many cases being apyrexial. The eye changes, parotitis, and facial palsy may occur in any order, and evidence of a polyneuritis may also occur in occasional cases with paræsthesiæ and absent tendon reflexes. Cases have occasionally been reported with an increase of large hyaline cells in the blood.[6 10 13]

Heerfordt [1] first described the condition in 1909, reporting three cases and referring to two others on record.[4 5] Brewerton [3] in 1910 was the first to report a case in England, and was followed by Mackay [14] (1917). Since Heerfordt's description isolated cases were reported, chiefly from continental countries where the syndrome seems to have attracted more attention (Lehmann,[12] Leeksma [11]). Maitland Ramsay [15] in 1921 reported a case in a female, aged 31, with a prodromal œdema and erythema on the legs followed by iridocyclitis, bilateral enlargement of the parotid glands, and bilateral facial palsy. This patient also suffered from intercostal neuralgia, nasal voice, and dysphagia. In the following year Fielding and Venner [9] reported a similar case with erythema of the skin and loss of knee- and ankle-jerks. Parker [17] in 1926 reported one case and reviewed the literature, which was again reviewed in 1931 by Merrill and Oaks,[16] who also reported a case. Lehmann,[12] who

followed up Heerfordt's original cases, suggested that the condition might be tuberculous. Bang [1] is stated to have recorded a fatal case of uveo-parotitis which died of miliary tuberculosis, but in his paper two cases are described and I can discover no record of the death of either. Berg [2] agrees with the suggestion that the condition is tuberculous. An atypical fatal case was reported by Rogers and Bodman [16] in 1926, but no autopsy was performed. Souter [19] in 1929 recorded a fatal case which died of miliary tuberculosis. Last year Garland and Thomson,[7] in describing a typical case in which death was due to miliary tuberculosis, collected further evidence to support the tuberculous origin of the syndrome, and suggested the name "uveo-parotid tuberculosis."

The syndrome has a low mortality, and the parotitis and facial palsy always recover, although the parotid gland may remain enlarged for a considerable time. The earlier authorities considered the prognosis of the eye condition favourable, although Heerfordt [8] and Maitland Ramsay [15] both recorded cases in which optic atrophy occurred, and permanent impairment of vision may occur. The case now reported has progressed to almost complete blindness, and if a tuberculosis origin is accepted the prognosis with regard to the eye condition should be guarded.

Jackson [9] in 1925 recorded a case treated by deep X ray therapy to the parotid gland, but as the parotitis and facial palsy subside spontaneously they do not require specific treatment. The eye condition should be treated as tuberculous iritis.

The present case is reported in support of the tuberculosis origin of the syndrome, being a typical case of uveo-parotitis.

CASE REPORT

Miss A., a typist aged 25, was admitted to St. Thomas's Hospital in December, 1932, complaining of mistiness of vision. Her family history disclosed nothing relevant, and her past personal history showed that she had had measles and chicken-pox in her infancy and mumps at the age of 7. Tonsillectomy was performed when she was 11. From the age of 13 to 23 she frequently suffered from boils on the face. Three weeks before admission she noticed swelling of the legs below the knees accompanied by a diffuse pink discoloration of the swollen parts. She rested in bed for one week and the swelling and discoloration of the legs subsided and she returned to work. A week before admission she developed an acute rhinitis, necessitating rest in bed. Six days before admission she noticed that her vision was becoming dim and misty. There had been no other symptoms except amenorrhœa for two months before she came into hospital.

On admission on Dec. 29th, 1932, the temperature was 99° F., the pulse-rate 92 per minute, and the respiration-rate 20. Vision: R.V. = 6/6; L.V. = 6/12. Examination of the eyes showed circumcorneal and conjunctival injection of both eyes with slight photophobia. There was no epiphora and no keratitis punctata. The fundi and optic discs were normal. In the chest there were fine crepitations at the apex of the right lung but no other abnormal physical signs. Radiography of the chest revealed no abnormality and these crepitations were thought to be of no significance. All other systems were normal.

She ran a remittent pyrexia, varying between 98·2° F. (morning) and 101° F. (evening), and all attempts to discover a cause for it failed. Further clinical and radiographic examination of the chest gave no help, and radiography of the nasal sinuses also showed nothing unusual. The urine was normal, being sterile on culture. A blood culture in February, 1933, grew *Staphylococcus aureus* but this was undoubtedly a contamination, and subsequent cultures were sterile. The Wassermann reaction was negative.

Five weeks after admission she complained of pain in the left ear and developed a left facial palsy of the lower motor neurone type. Examination of the ears disclosed nothing abnormal. At this time the knee-jerks were noticed to be absent. Three weeks later bilateral enlargement of the parotid glands commenced, the left being larger than the right; both glands were tender, firm, and non-fluctuant, as in mumps. This diagnosis, however, was very unlikely since she was very definite that she had had mumps at the age of 7. The evening pyrexia continued and so did the left lower motor facial palsy, but apart from absent knee-jerks no other abnormal physical signs could be discovered. At this stage, radiographic examination of the chest and nasal sinuses was again undertaken with negative results. Radiographic examination of the teeth was also normal and a barium enema followed by radiographic examination of the colon and appendix showed nothing abnormal. A blood count on March 30th, 1933, was as follows:—

Red cells ..	.. 5,210,000	Polymorphs ..	.. 60 %
White cells ..	.. 6,800	Large lymphocytes	.. 14 %
Hæmoglobin	.. 89 %	Small ,,	.. 8 %
Colour-index	.. 0·86	Large hyaline ..	.. 18 %

A lumbar puncture (March 28th) showed the cerebro-spinal fluid under normal pressure, clear, no coagulum, protein 60 mg. per 100 c.cm., slight excess of globulin, cells 2·5 per c.cm. (all lymphocytes). Chlorides 740 mg. per 100 c.cm. Lange curve normal. Wassermann reaction negative.

Fifteen weeks after admission the pyrexia still continued, the circumcorneal and conjunctival injection persisted in both eyes, which showed haziness of the iris with irregular pupils; vision was poor and photophobia slight. The bilateral enlargement of the parotid gland had almost subsided and the left facial palsy had cleared up. The knee-jerks were still absent. She was discharged in April, 1933, to rest in the country. In May she was readmitted for ten days, when the vision was poor (R.V. = counts fingers at 1 metre; L.V. = hand movement perceptible at 1 metre). The pupils were irregular, and there was circumcorneal injection and keratitis punctata. No abnormal physical signs were found in the chest, but radiography showed fine mottling of the small ring type diffusely throughout the lung field. Dr. G. T. Hebert informs me that he attributes this type of X ray appearance to inflammation around the smaller bronchioles (he has shown films of a similar nature at meetings of the Tuberculosis Association) and that they may later subside. Amenorrhœa still persisted but Mr. J. M. Wyatt found nothing abnormal in the pelvic organs.

By arrangement with Dr. G. MacDonald, tuberculosis officer for Battersea, the patient received a course of injections of tuberculin (bacillary emulsion). She was then transferred to Whitstable and Tankerton Hospital, under the care of Dr. J. E. Saville, where the course was continued. I am indebted to Dr. MacDonald and Dr. Saville for their kindness in furnishing particulars of the case whilst under their care.

In May, 1934, she was readmitted to St. Thomas's Hospital. Pyrexia was absent, vision was poor, hand movements only being perceptible at 1 metre, circumcorneal and conjunctival infection persisted. The aqueous fluid in the anterior chamber of the eye was slightly opaque. The pupils were irregular and iris very hazy. Four large patches of yellow exudate were present on each iris, giving a typical picture of tuberculous iritis. The parotid glands were still slightly enlarged behind the angle of the jaw, but there was no evidence of a facial palsy. The knee-jerks had returned. Clinical examination of the chest showed no abnormality, but on radiographic examination fine mottling still persisted. Amenorrhœa was still present.

SUMMARY

The case reported is typical of the syndrome known as uveo-parotitis polyneuritica. The patient is a young adult female with prodromal skin rash, iridocyclitis, bilateral parotitis and unilateral facial palsy, both subsiding spontaneously, and evidence of peripheral neuritis. A blood count showed a considerable increase of hyaline cells. In the early stage it was impossible from examination of the eyes to suggest a definite cause for the iridocyclitis, but the subsequent progression to a typical tuberculous iridocyclitis

strongly supports the suggestion that the syndrome is tuberculous in origin.

I am indebted to Sir Maurice Cassidy and Mr. A. C. Hudson for encouragement and permission to report this case, which was admitted to St. Thomas's Hospital under their care, and to Dr. Geoffrey Fildes for radiographic examinations.

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UVEO-PAROTITIS

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"UVEO-PAROTITIS is a definite clinical entity, characterised by bilateral uveitis and parotitis, pursuing a chronic course with a well-marked tendency to spontaneous recovery."[1] It was first described in 1909 by Heerfordt,[2] who termed it "febris uveo-parotidea" and considered that it was a complication of mumps. This contention has been definitely rejected by numerous observers. Macbride[3] described it as uveo-parotitic paralysis, to stress the commonly associated facial palsy, and recently Garland and Thomson [1] have entered a strong plea that it should be known as uveo-parotid tuberculosis, so convinced are they that tubercle is the ætiological factor. Although they have built up a strong case to substantiate their judgment, it remains very difficult to harmonise certain features of the disease with this assumption, and a more guarded suggestion may legitimately be advanced. Reference will be made to this later.

In preparing this note I have permitted myself to draw freely upon the facts given in Garland and Thomson's admirable article. They have analysed 47 cases: of these, 62 per cent. were under the age of 30, with extremes of 7 and 59, of which the majority were females. The disease presents the following features, which suggest as pecific infection rather than tuberculosis.

The *prodromal symptoms* may take the form of malaise, lassitude, gastro-intestinal disturbances, skin eruptions of the type of erythema nodosum, pyrexia, joint pains, paræsthesiæ, cough, night sweats, or in the case of two sufferers I have seen, failure of accommodation when reading.

The *parotitis* is usually bilateral. The glands are rarely painful but tender to the touch, while suppuration never occurs. With this may be associated enlargement of the lacrymal glands and submaxillary salivary glands, together with a generalised adenitis and splenomegaly.

The *facial palsy* is often, but not constantly, present, and may be unilateral, either preceding, or more usually following, the parotid enlargement.

The *pyrexia* is inconstant, and more commonly a prodromal symptom; but it may recur or persist in a low-grade degree for a long period.

The *uveitis* is insidious and painless in its onset, while one eye only may be affected. It is characterised by the production of a typically adhesive exudate, readily producing posterior synechiæ of considerable strength and permanency. There are profuse and coarse deposits on the back of the cornea, while the vitreous may contain numerous opacities. The iritis may take the alternative form of nodular deposits. The gravity of this iritis will be readily appreciated when it is realised that the adhesions between the pupillary margin and lens capsule may be so complete as to produce a secondary glaucoma—a not very uncommon complication in untreated cases.

Laboratory investigations, apart from the histological picture of tuberculosis, are negative.

The present case is reported because of the extreme diversity of the neuritic signs which alone must give rise to hesitancy in the acceptance of the tuberculous theory. I am indebted to Mr. Rupert Scott for his kindness in allowing me to quote the notes of this case.

CASE REPORT

The patient, a man aged 27, first came under observation in April, 1932, with a history of three weeks' misty vision and focusing defect, together with enlarged glands behind the angles of the jaw. Examination revealed slight ciliary injection of left eye, together with keratitis punctata (K.P.). The pupils were semi-dilated, but reacted briskly to light and sluggishly to accommodation. There was cycloplegia of the left eye. The V.R. = 6/6, V.L. = 6/6. Both parotids were painlessly enlarged. A mydriatic was ordered for both eyes.

Two weeks afterwards left facial palsy developed, and this was followed a week later by a similar palsy on the right. He complained of sensations like "pins and needles" over the middle, ring, and little fingers of the right hand, and over the right shin. The slit lamp showed a few K.P. in the right eye, numerous K.P. in the left, with hazy media. The fundi were normal except for engorgement of the veins. Two weeks later he complained of hoarseness of the voice and pain down the right leg, together with weakness of the leg. He was found to have weakness of the palatal muscles on the right side; the right vocal cord fixed and abducted; and the right knee- and ankle-jerks absent.

These nervous phenomena disappeared in the space of a few weeks, except the facial palsy, which can still be detected on the right side, although it has very markedly improved as the result of electrical treatment. Five months later R.V. = 6/60, L.V. = 6/6. He had by this time discontinued the use of the mydriatic to the left eye, so as to enable him to resume work, while the right vision gradually improved up to 6/12; but this improvement was not maintained. At the present time the left eye is quiet and, except for a few fine posterior synechiæ (which formed after the discontinuance of the mydriatic), shows no sign of inflammation, except for an occasional tendency to ciliary flushing: V.L. = 6/5. The right eye still shows some K.P., together with slight ciliary injection. The pupil is evenly dilated, but the vitreous is markedly opaque, with the result that the vision has not improved beyond 6/60. A small nodule is still palpable behind the angle of the left jaw.

The Wassermann reaction and examination of the blood were negative.

ÆTIOLOGY

Garland and Thomson base their contention upon the following evidence:—

1. Post-mortem findings of miliary tubercle and tuberculous deposits in the heart, as reported by four observers.
2. Biopsies with histological evidence of tuberculosis: (*a*) iris, four observers; (*b*) bulba conjunctiva, one observer; (*c*) parotid, five observers.
3. Iris nodules, five observers.

4. Focal reaction to tuberculin, two observers.
5. Tuberculosis of lung with positive sputum, one observer.

"That is to say," in their opinion, "in more than one-third of recorded cases, we have incontrovertible evidence of tuberculous infection." But in spite of this somewhat imposing mass of evidence there are certain facts which are difficult to reconcile with this hypothesis.

1. *Pathological.*—The tubercle bacillus has never been demonstrated by any investigator in histological sections prepared from iris, parotid, or lymphatic glands. This is possibly explained by the absence of caseating lesions. Cavara,[4] having injected infected material into the anterior chambers of rabbits' eyes, failed to produce a similar lesion, while as the result of the injection of similar material into the peritoneal cavity of three guinea-pigs, only one died subsequently with tuberculous post-mortem findings.

2. *Eye condition.*—Except in those cases where nodules were found in the iris characteristic of tubercle, syphilis, or leprosy (the last two having been said to be excluded), the course of the eye lesion is not characteristic of tuberculous disease of the eye. Unless sight is spoiled by the development of secondary glaucoma, the general tendency is for good recovery of function, while this is not the general experience of tuberculous disease of the eye.

3. *Nervous lesions.*—The phenomenon of the facial palsy preceding the parotid enlargement is explained by Garland and Thomson as being in all probability due to pressure by the deep portion of the gland upon the facial nerve as it leaves the stylomastoid foramen, general glandular enlargement being inappreciable. This is probably not the explanation, in view of the case reported by Mohn [5] in 1933, where the lesion was localised somewhere between the geniculate ganglion and the branching-off of the chorda tympani: that is, in the bone itself, thus excluding pressure from the parotid, which, moreover, was not yet enlarged. (The focal diagnosis was based on the undoubted peripheral site of the paralysis and on the simultaneous disappearance of the sense of taste on the anterior two-thirds of the tongue.) The neuritic manifestations would therefore appear to be produced by some circulating toxin, which is not a feature of tuberculosis.

Syphilis, beri-beri, pseudo-leukæmia, diphtheria, atypical Mikulicz's disease, have all been suggested and in their turn dismissed, while Critchley and Phillips,[6] although advocating a further search for the tubercle bacillus, considered that the weight of evidence pointed to some specific virus, or agent, as yet unknown.

Thus it will be readily seen that although there are features common alike to uveo-parotitis and tuberculosis, yet the composite picture of the signs of uveo-parotitis bears but a slight resemblance to tuberculosis. While there appears to be a special tendency towards systemic tubercle amongst those exhibiting the uveo-parotitic syndrome, there is a significant omission in the vast literature of tuberculosis of reference to these manifestations.

Weve [7] perhaps adopts the wisest attitude in considering that it would become more certain that we are dealing not with tuberculosis but with an unknown ætiological agent, which from the tubercle-like histological findings can be termed para-tuberculosis. It is significant that cases are not infrequently met with where there is no suggestion of latent tubercle, either on clinical grounds or on the family history, and of the half-dozen cases that I have had the opportunity of seeing only in one was there a possible tuberculous taint. I would therefore suggest that in view of these conflicting facts the designation of uveo-parotid tuberculosis is at this stage unjustified.

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MIKULICZ SYNDROME IN ASSOCIATION WITH TUBERCULOSIS

REPORT OF A CASE

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IN 1888 Mikulicz [1] first described a condition of painless bilateral swelling of the salivary and lacrymal glands associated with little, if any, constitutional change. He considered it to be a true disease entity attributable to chronic infection from some source. Subsequently further cases were added to the literature. Many of these accorded closely with the original description, but others exhibited the clinical picture as part only of some other general disease; in some cases only certain of the glands were involved. Thus "Mikulicz syndrome" became recognised as a separate entity from Mikulicz disease. Certain writers doubted even the existence of a separate disease, and maintained the condition was in all cases purely a syndrome which might occur in the course of a number of general diseases. Howard [2] stated that all gradations from that of involvement of one or more salivary glands, through the typical picture of Mikulicz disease, to a fully developed lymphatic leukæmia might be observed. Various writers reported cases showing this syndrome in the presence of a syphilitic infection, lymphadenoma, lymphosarcoma, uveo-parotid fever, gout, and tuberculosis. Various classifications were suggested, the chief being perhaps those of V. Brunn,[3] Howard, and Thursfield.[4] The first-mentioned divides the cases into two main groups dependent on the presence or not of an alteration in the blood picture. The possible associated involvement of the spleen and lymphatic glands accounted for a subdivision of the first group into two. Thursfield, who gives a very full review of the whole subject up to 1913, suggested the following classification:—

1. A congenital, hereditary, or familial affection.
2. Mikulicz disease with involvement of the lymphatic apparatus.
3. Mikulicz disease proper.
4. Leukæmia.
5. Tuberculosis.
6. Syphilis.
7. Gout.
8. Sialodochitis fibrinosa.

A later and rather similar, but fuller, classification was offered by Schaffer and Jacobsen.[5]

The syndrome has also been noted in connexion with Erb's juvenile dystrophy, Graves's disease, paralysis agitans, and dementia præcox. It seems possible that in these cases the association was coincidental.

It is obvious from the preceding remarks that the subject of Mikulicz disease or syndrome is a very wide one. The pathology of the condition, the prognosis, and the treatment is that, in the case of associated disease, of the particular disease itself. A word may be said in regard to the group of cases which accord with that originally described by Mikulicz. The histological picture in those cases where a gland has been removed has been that of extensive fibrosis, with the general characteristics of a chronic inflammatory process. The progress of the disease appears to be benign, and to have no direct effect on longevity. Symptoms are few and restricted to some dryness of the mouth and eyes. The æsthetic factor is the most important in many cases. Various observers (Krailsheimer,[6] Thursfield) have noted that a coincidental infection—e.g., pneumonia or erysipelas—may result in a diminution in size or even disappearance of the swollen glands. In some cases surgical removal of one gland has led to a similar result in the remaining gland. Irradiation of the affected glands has been employed by certain observers. A complete report of this procedure has recently been published by Leucitia and Price,[7] and reference should be made to the fact that in addition to valuable information on this special point, this particular contribution includes an excellent survey of the whole question of Mikulicz disease and syndrome. Amongst other observations it was found that the response to radiation depended largely on the histological picture presented. Thus all types exhibiting lymphocytic infiltration, whether of inflammatory or neoplastic origin, showed a satisfactory response to irradiation therapy. Good results were obtained in cases of Mikulicz disease proper, and in cases of Mikulicz syndrome in which the causative factor was tuberculosis, lymphosarcoma, leukæmia, and lymphadenoma. It was also pointed out that the administration of arsenic and iodides during treatment is of some value.

A CASE RECORD

Tuberculosis has already been referred to as an ætiological factor in the production of Mikulicz syndrome. A careful survey of what has been written on the subject shows that this particular association is rare. It was felt, therefore, that it would be valuable to place on record the occurrence of a case exhibiting many factors strongly suggestive of such an association.

The patient, a male aged 18, was first seen by me in 1931 and has been under observation at intervals since that time. He gave a 12 months' history of painless bilateral swelling of the face, first noticed under the jaw and later at the sides of the face. For many years he had been subject to recurrent skin trouble on his back. This occurred as crops of nodular lesions which tended to break down, leaving shallow ulcers which finally healed as shallow punched-out scars. From the age of 12 the sight of the left eye had been poor, or, as he said in his own words, "there seems to be a spot in the centre—I can see all round it." He complained of some dyspnœa on exertion but there was no history of cough, night sweats, or loss of weight, and the general health was good. It was elicited that six years previously he attended the local tuberculosis clinic. Below is given an extract of his notes at that time and subsequently. (I am indebted to Dr. Howell Williams and his assistant, Dr. G. Prosser Evans for this courtesy.)

He originally attended in 1927, complaining of a cough, but no abnormal physical signs were noted. In 1928 there was a history of pleurisy, and examination showed consolidation of the left upper lobe and the right base. A curious pemphigus was noted over the upper scapular regions. The sputum was negative for tubercle bacilli. In 1931 swollen glands were observed in the neck. The von Pirquet test was repeatedly negative, and the Wassermann reaction was also negative. In 1932 the glandular condition was unchanged, but apart from some dyspnœa on exertion he felt quite well. Examination showed some flattening of both apices with whispering pectoriloquy over the right upper lobe accompanied by post-tussive crepitations. The radiological appearances suggested in the right upper zone the presence of a definite tuberculous lesion, probably quiescent and fibrotic in nature. The appearances of the left second quarter were definitely suspicious, and there was evidence of probable old-standing pleurisy at the left base.

Examination.—A well-nourished, intelligent boy, showing bilateral enlargement of both parotid and submaxillary glands; no tenderness and no overlying redness; lacrymal glands not involved but cervical glands enlarged on either side; axillary and inguinal glands not enlarged; teeth and tonsils healthy. The spleen was definitely enlarged and mobile. The pupillary reactions were normal. Patches of choroido-retinitis were seen in both fundi to the outer side of each disc and examination showed a central scotoma in the left visual field. Mr. Frank Thomas examined this case, and in his opinion the lesions were those of healed tuberculosis. The findings in the chest accorded with those given above. Over the whole of the cutaneous area extending from the shoulders to the buttocks and on both legs numerous roughly circular, shallow scars were seen; they varied in size from a threepenny piece to a two-shilling piece, the edges were sharply defined and the bases parchment-like. The appearances presented accorded closely with those seen in a papulonecrotic tuberculide. No abnormality of the cardiovascular system or further abnormality of the nervous system was noted.

Special Investigations (for which I am indebted to Dr. A. F. Sladden).—The blood Wassermann reaction was negative. Biopsy of a cervical gland showed chronic lymphadenitis with much fibrosis, but no evidence of caseation or of tubercle bacilli and no evidence of malignancy. The blood count (1931) showed:

Red cells ..	.. 4,136,000	Polymorphs ..	.. 50 %
White cells ..	.. 18,800	Lymphocytes	.. 41 %
Hæmoglobin	.. 74 %	Monocytes ..	.. 7·5 %
		Eosinophils ..	.. 1·5 %

The patient was last seen in May, 1932, when a very marked general improvement was noted. The most striking feature was the almost complete disappearance of the enlargement of the salivary glands. The cervical glands were still enlarged, and also glands in the mastoid and occipital group. A new feature was the presence on both legs of purpuric lesions, which, he stated, had appeared in crops during the previous months. They gave rise to no constitutional disturbance. The remaining clinical features showed no change. A further blood count (1933) showed:

Red cells ..	.. 4,808,000	Polymorphs ..	.. 64·5 %
White cells ..	.. 12,000	Lymphocytes	.. 24·5 %
Hæmoglobin	.. 60 %	Monocytes ..	.. 10·5 %
Platelets ..	.. 480,000	Eosinophils ..	.. 0·5 %

It is to be specially noted that no form of treatment was instituted during the period he was under observation.

DISCUSSION

It may be pointed out after a careful study of the above report that the existence of a definite tuberculous ætiology has not been established. Admittedly it has not been possible to demonstrate the presence of the tubercle bacillus in any one lesion. On the other hand, I think it is fair to say that, taken together, the various features presented offer very strong reason for the suggestion that tuberculosis is in fact the primary causal factor in this case. Reference will be made later to this particular point.

As has already been pointed out, this association of tuberculosis with Mikulicz syndrome is apparently rare, and very few cases have been hitherto recorded. In 1910 Igersheimer and Pollot,[8] after an exhaustive survey, found records of only three authentic cases of tuberculous origin, and were finally of opinion that this particular disease was very rarely a causal

factor. In the three cases referred to, tubercle bacilli were identified in excised gland tissue. In recent years Preston and Jeafferson [9] have reported a case associated with pulmonary tuberculosis, bacilli being demonstrated in the sputum. Leucutia and Price,[7] in a very excellent survey of irradiation treatment of Mikulicz disease and syndrome, refer to two further cases again associated with established pulmonary tuberculosis. In one case only is the fact noted that the sputum was positive, although in the second a gland biopsy showed the presence of "typical tuberculous granuloma." These writers were of opinion that tuberculosis is more commonly an ætiological factor in the disease under consideration than is generally accepted. Apart from these cases there are others in which, although the tubercle bacillus has not been demonstrated, the clinical findings elsewhere leave little room for doubt in regard to the ætiology. Thus Marsh [10] and Griffith [11] each reported cases in which miliary tubercle formation was identified microscopically in excised gland tissue. The case reported by the first-mentioned is of particular interest in relation to the present contribution since in this case, too, cutaneous lesions were present. These lesions consisted of freely movable subcutaneous tumours, showing no tendency to caseation and presenting, histologically, miliary tubercle formation. The only other case report in which associated cutaneous lesions of possible tuberculous ætiology are recorded is that of Plate and Lewandowsky.[12] The eruption occurred on the lower limbs and resembled erythema nodosum. This is of interest in view of recent observations on the suggested ætiology of this skin condition.

Recently a valuable contribution to the literature has been made by Garland and Thomson.[13] The clinical features of their case resemble in many ways those of the case described above. Quite apart from this, the work of these writers strongly suggests that two conditions previously regarded as separate and distinct examples of Mikulicz syndrome—i.e., tuberculous parotitis and uveo-parotid fever—are in fact one and the same thing. For this reason it is necessary to briefly consider certain features presented in this paper.

Uveo-parotid fever or uveo-parotitis has usually been included in the group of diseases classified as Mikulicz syndrome. Garland and Thomson report one case, with post-mortem details, and review the published records very fully. Clinically, apart from the swelling of the salivary glands, the main feature in uveo-parotid fever is a lesion of the uveal tract, iridocyclitis being by far the commonest. Facial palsy is also a not uncommon accompaniment. It is interesting to note from this survey that pyrexia was by no means a constant finding. The autopsy details in their own case showed miliary tubercle formation in the salivary glands, the liver, lungs, kidney, heart, and uterus, but no caseation was seen, and no tubercle bacilli were demonstrated. They lay particular emphasis on this question of the absence of the features normally observed in tuberculous lesions elsewhere—i.e., caseation and presence of tubercle bacilli. They point out that the type of tuberculosis found in these cases is of an endothelial fibrosing type, and that caseation is absent and tubercle bacilli not found. To support this they refer to the fact that in all cases of uveo-parotid fever in which biopsies have been performed the histological features are fully in accord with the findings as set out above. As an explanation it is suggested that the infection is of low virulence, or that the resistance of the patient is unusually good. In conclusion they affirm that uveo-parotid fever is always tuberculous in origin, and suggest as a more appropriate name "uveo-parotid tuberculosis."

The case at present reported seems, clinically, to resemble very closely the picture as described by Garland and Thomson, and seems also to fall into the group of "uveo-parotid tuberculosis." The repeatedly negative Pirquet test is interesting in view of the statment made by Hart [14] that, in the presence of certain cutaneous conditions suspected to be tuberculous, the presence of a negative response tends to support, rather than negative, the diagnosis. The subsidence of the gland swelling without any treatment and the healed appearance of the lungs, as shown by radiography, suggest the infection was a mild self-limited one—a feature, as pointed out above, very constantly seen in uveo-parotid tuberculosis. The uveal lesion is interesting in view of its rarity. Iritis or iridocyclitis is more common than choroiditis. Splenomegaly is present in this case but is uncommon, although Hamburger and Schaffer[15] report one case.

SUMMARY

A case of Mikulicz syndrome is reported which clinically appears to be of tuberculous ætiology, and which, it is suggested, may be classified as a case of uveo-parotid tuberculosis. Certain unusual features are the site of the uveal lesion and the presence of an associated skin condition. The suggestion that the tuberculous infection in these cases is of a benign type is supported by the progress noted in this case.

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THE BORDERLINE OF DENTAL SURGERY

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A close association with the dental profession may fall to the lot of any surgeon and bring with it a group of interesting problems, such as the sore tongue, hæmorrhage from a socket, facial paralysis, and dislocation of the jaw.

SORE TONGUE

The sore tongue may vary from pain and a burning sensation without gross pathology to generalised ulcerative stomatitis. The smaller the pathological lesion, the more interesting the case. The patient with a sore tongue is either using the tongue too much or too little. By using the tongue too much I mean the hysterical search for non-existent disease (dyspepsia, cancer). One young girl on putting out her tongue revealed the epiglottis; much practice is needed for this in a normal person. More frequently the patient discovers the circumvallate papillæ or, on the lateral border of the tongue, the papillæ exfoliativæ and fears they indicate cancer, often because there has been a case in the family circle.

Pain follows the discovery of these normal structures and so functional disease is established. With the help of a large mirror the patient should be made to localise the pain and swelling. The mirror is then used on a friend and the normality of the area demonstrated, explaining that with a few weeks' practice the friend would be able to show the papillæ more easily and be rewarded by pain. The demonstration over, all use of the mirror is forbidden for a fortnight, by which time the tired muscles have usually recovered and cease to cause pain.

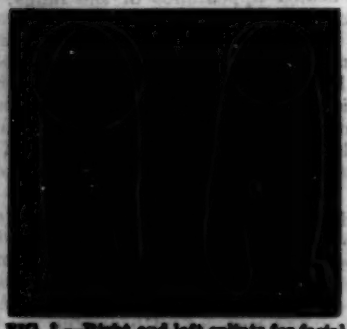

FIG. 1.—Right and left splints for facial paralysis.

Too little use of the tongue may cause glossitis. The primary factor is often a mild trauma—a cup of very hot tea, hot soup, or a bite. Often it is an exacerbation of a chronic glossitis or stomatitis due to neglected caries or defective dentures. A course of dental treatment is followed by success in the majority of cases, but a small number persist. In many of these, a chemical element has added to the distress—e.g., a powerful mouth-wash or dentures soaked overnight in well-advertised antiseptics. Such causes are usually appreciated by the profession, and the dental surgeon is asked to attend to caries and report on the dentures. Five years should be the limit of service required of a denture—longer only if the dental surgeon reports that it is satisfactory. Decomposing food beneath the denture may irritate the tongue; indeed, ill-fitting dentures are becoming a recognised factor in epithelioma of the mouth, increasing the frequency of this disease in odd situations, especially in women, who more frequently resort to artificial teeth but fail to appreciate the importance of subsequent corrections. Soaking the teeth in chlorine or carbolic compounds must be replaced by simple brushing. All tooth-pastes containing carbolic and its compounds or pepsin must be withheld. Achlorhydric anæmias should be remembered and receive appropriate treatment.

In spite of these measures, a painful tongue may resist treatment unless the element of stagnation is appreciated. Pain caused by too little use of the tongue is illustrated by the following case:—

Mrs. A., a widow, was seen in a pitiable condition with generalised ulcerative glossitis and stomatitis; her breath was nauseating, she was unable to swallow, she was losing weight and sleep, distressed by pain and anæmic from toxic absorption. Her worst fear of cancer being allayed, the history gave a clue to the bleeding ulceration. During the nursing of her late husband six months before her tongue had become painful, possibly scalded by hot tea. It was so painful that she ceased to eat, and then so painful that she could not talk. I explained to her that no mouth-wash can replace the natural lubricant, saliva, and that salivary flow is dependent upon jaw and tongue movements (as witnessed by the dry mouth in the morning) and is banished by speech, whistling, and food. She was sent away to chew a peach-stone 20 times, three times a day, and wash out the mouth twice daily with olive oil. Seen three weeks later, the change was remarkable, and no further treatment was necessary.

The avoidance of a dry mouth has long been appreciated as a preventive of post-operative parotitis. Chewing gum is nauseating to many; the peach- or plum-stone is more acceptable and has proved successful. Warm water or saline mouth-washes help if used with enthusiasm and vigour.

Having written somewhat forcibly on the danger of boiling water in infections of the finger and decried the slogan of the "hotter the better," I did not think it would ever be necessary to discuss the danger of boiling water in association with the tongue. But it is not sufficient to warn the public merely that pain and discomfort may result from fluids imbibed too hot; the "hotter the better" phase may even be applied in ignorance to the mouth!

A professional man experienced a slight irritation. Antiseptics having failed to relieve it, he proceeded to apply "aseptic" treatment and used boiling water from a thermos flask at intervals between his professional duties. When seen he was exhausted by pain and dribbling and was unable to swallow or speak; the tongue was three times its normal size and had in addition a mild streptococcal infection. The lips and even the eyelids were swollen. Incision was necessary and later dental extraction. By counting and sucking sweets, and later by the plum-stone method, relief was obtained, but it was too early to say whether some elephantiasis of the tongue would not persist and require operation. Unfortunately the patient has since died of influenzal pneumonia.

HÆMORRHAGE FROM A TOOTH SOCKET

After extraction of a tooth, the healing of the socket from blood-clot to bone in the presence of millions of mouth organisms is one of the wonders of nature. Hæmorrhage may be a little difficult to check; pressure, the removal of a detached fragment of alveolar margin, light crushing in of the bony walls, or a stitch may be tried. Styptics have their danger—especially adrenaline—in sepsis and in old age, the excessive anæmia and subsequent thrombosis adding to the possibility of necrosis with eight weeks of pain during separation of bone. Sucking of the socket and disturbance of the clot by the tongue often prolong hæmorrhage, and may delay healing, producing a condition known as "dry socket."

FIG. 2.—The splint applied.

An experience of continuous bleeding after extraction of two lower molars in a case of hæmophilia in a young boy may be worth relating. Blood transfusion had preceded extraction but hæmorrhage followed and continued for several days. On inspecting the bleeding sockets at a second transfusion it was decided to cover that half of the lower jaw with dental composition, not projecting into the socket. For three days hæmorrhage ceased but it recommenced on removal of the protecting stent; this was replaced for about a week and no further hæmorrhage occurred.

It is an easy matter for the surgeon to make such a crude protection of the healing area. A dental surgeon could make a more elegant cap and so counter

the disturbance of the clot by sucking or an inquisitive tongue.

FACIAL PARALYSIS

I have seen several cases of Bell's palsy after dental manipulations. My attention was first directed to it by a patient who had had a novocain injection for an upper molar. Immediately he complained that

FIG. 3.—A method of reducing a dislocation of the jaw, considered safer than the one usually illustrated.

the cheek felt stiff, and within two days developed a complete facial paralysis. It is difficult to imagine how the novocain could reach the seventh nerve from such a situation. The story was so similar to the usual pressure paralysis seen from time to time from the operating table that I was led to a search for a mechanical cause for the condition, and offer the following explanation.

In treating the molar teeth the dentist has to put the facial nerve under considerable tension as it crosses the neck of the mandible; indeed, the dislocation of the jaw is not unknown. If at the same time he is taking a finger or thumb grip from the vertical ramus the facial nerve is in grave danger of compression. Many of the novocain injections are purposely introduced with considerable force to obtain a good effect. A patient in a dental chair may signal pain, but he has little chance of stating the site of the pain, and if the point is not appreciated by the dentist he uses further force from a mistaken idea that the tooth is still sensitive. That the paralysis may not be immediate should be appreciated; the reaction to pressure may take as long as three or four days to reach its height and may be produced either by pressure or by waterlogging from œdema. The paralysis is aggravated by the pull of the healthy muscles of the opposite side and by gravity.

In infiltrating the inferior dental nerve a facial paralysis by direct diffusion may occur. However produced, the weak or paralysed facial muscles must be put at rest by strapping down the eyelids and by a splint which will elevate and pull back the angle of the mouth. Early massage and electrical stimulation are contra-indicated. The usual hook of copper wire covered with rubber tubing and bent over the ear tends to pull the angle too far backwards and too little upwards. Mr. Fowler, of Messrs. Alexander and Fowler, instrument makers, has improved the facial splint for me by a double hook of rubber-covered wire at the angle of the mouth, continuing the rubber over the head to enclose another short length of wire bent around the opposite ear (Figs. 1 and 2). This must be worn continuously for six weeks or longer and is elastic enough to allow the patient to practise the active exercises of snarling, grinning, &c., at an early date. Care must be taken not to fatigue the muscles by overdoing the exercises.

Dislocation of the jaw may occur spontaneously during yawning, especially after the muscles have been fatigued by dental treatment in the molar region a few hours previously. Such dislocations are usually easy to reduce by the standard method, which is not without danger of fracture of the jaw in old age. It is safer to proceed as illustrated in Fig. 3, a method recently successful in an old lady whose jaw was dislocated for 24 hours and was reduced painlessly without an anæsthetic. The patient lies upon a couch, the operator stands behind the head and places his thumbs on the molar area with the fingers on the cheeks crowded round the angle of the jaw. He very slowly exerts through his extended arms the weight of his body. If this is done without jerkiness and continued (as it may be) without fatigue on the part of the operator, the powerful temporal and masseter muscles will elongate and reduction follows. The angle of the jaw is in no danger of fracture.

"WHITE BILE"

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With a Note by J. PATTERSON, Ph.D.

BIOCHEMIST TO CHARING CROSS HOSPITAL

THERE are rare occasions when, owing to a combination of unusual circumstances, a natural experiment is performed from which deductions can be drawn that might otherwise be difficult to obtain. In the case recorded here the conjunction of an anatomical abnormality, in itself rare, with a pathological change resulted in a complete isolation of the bile-ducts from both bowel and gall-bladder and so enabled some observations to be made upon the physiology of the mucous membrane of the ducts. It is for this reason alone that the case is worthy of note.

A male patient, 64 years of age, was admitted to the Bolingbroke Hospital with intense jaundice. This was of six weeks' duration and had been accompanied by a little pain at the onset. The previous history was negative and at no time during the illness had there been any vomiting or dyspepsia. Constipation was marked, the stools were pale, and the urine deeply bile-stained. Upon examination the liver edge could be felt well below the costal margin, but no gall-bladder was palpable nor could any growth be detected in abdomen or pelvis.

Operation was undertaken to confirm the probable diagnosis of carcinoma of the head of the pancreas and also with a view to attempting some palliative procedure for the relief of the jaundice and its accompanying symptoms. Through a paramedian incision the enlarged liver was retracted up and a contracted gall-bladder with some surrounding adhesions identified; its contents were obviously of semi-solid consistency. In the right edge of the gastro-hepatic omentum was a large tubular structure comparable in size with the jejunum and deeply bile-stained like all the surrounding structures.

Wondering if this could be a distended portal vein, I inserted a fine needle and to my surprise obtained a water-clear limpid fluid. It then became clear that this was a bile-duct and, after having drawn off several ounces of the material for biochemical investigation, the duct was freely opened and explored by finger and probe. Above, it divided normally into the hepatic ducts, each of which would easily admit the thumb; below, behind the pancreas, it came to a dead end and in this situation a hard mass could be felt which was without doubt the primary disease. The most interesting feature of the case was, however,

that no communication with the gall-bladder could be established, nor could I offer any explanation of the contracted state of the gall-bladder or of the pultaceous character of its contents. The patient's general condition precluded prolonged exploration and so the operation was terminated by the insertion of a large drain in the enormously dilated common duct.

On the day following operation some 45 oz. of thin bile of normal colour drained from the tube and the jaundice diminished a little in intensity. This drainage continued in decreasing quantities while the patient became increasingly drowsy and died on the tenth day from cholæmia.

The post-mortem revealed a most interesting explanation of the operative findings, for the carcinoma of the head of the pancreas had not only produced an absolutely complete obliteration and destruction of the lower end of the common (hepatic) duct, but owing to an anatomical abnormality the cystic duct had apparently joined with the common duct only at the level of the ampulla of Vater, so that this too was also destroyed and all communication with the bowel and the common duct cut off. This anatomical peculiarity combined with the growth had thus led to a complete isolation of the gall-bladder, and the shutting off of all communication between the hepatic ducts and both bowel and gall-bladder. Isolation of the gall-bladder by stone or growth is, of course, not uncommon, and the putty coloured pultaceous material which concentrates therein is fairly well known and sometimes described as "white bile." The complete cutting off of the hepatic ducts, however, is a different matter, for usually these remain connected with a distended gall-bladder which is still capable of concentrating bile and so keeps up a small biliary circulation in the ducts. Under these circumstances the common bile-duct is usually moderately dilated and contains coloured bile. In the case under discussion this could not occur, and correspondingly two unusual features were seen: (1) the colossal dilatation of the duct, far greater than I have ever seen in any other obstructive case, and (2) the watery nature of the contents in surprising contrast to the deeply bile-stained walls of the duct from which it was issuing; this material looked exactly like cerebro-spinal fluid and was at first glance thought to be such in the biochemical laboratory.

I have asked Dr. Patterson, of the biochemical laboratory, Charing Cross Hospital, to comment upon the chemical characteristics of the fluid, but from the surgical point of view it is evident that certain deductions can be drawn. It must be presumed, of course, that the liver had ceased to secrete bile owing to the back pressure, but that it was still capable of doing so is shown by the large amount of drainage after the operation. In the earlier days of the illness the duct evidently became distended with normal bile, and its increasing capacity allowed for a small amount of further biliary secretion until the critical pressure was reached. Thenceforward the pressure remained constant while the contents of the duct were changed by the absorption of salts and perhaps by simultaneous secretion. The walls of the main bile-ducts are thus capable of changing the character of the contained bile, but not of concentrating it as a whole to a pultaceous mass such as is seen in the gall-bladder, containing cholesterin, mucus, and debris. In the usual case where the common duct is obstructed low down a constant leak up the cystic duct to replace the bulk lost by concentration in the gall-bladder allows a slow but continuous secretion of bile, and this keeps the ducts full of pigmented bile.

One further point deserves mentioned; at the operation although the higher hepatic ducts were emptied the fluid obtained still presented its watery character, while over the surface of the liver there were a number of large subperitoneal channels obviously filled with the same fluid and representing anastomotic bile vessels. It would appear therefore that with the complete stagnation of bile in this case the smaller ducts in the liver act in the same way as the others in absorbing most of the essential materials from their contents. How far such absorption by the ducts can be regarded as part of the normal physiological mechanism in the secretion of bile it is not proper to deduct from this case, since the pressure in the ducts must have been considerably above that of normal secretion, but it is at least suggestive that there may be some absorption always going on, the mechanism of biliary secretion thus remotely resembling that seen in the tubules of the kidney during secretion of urine.

In the strict sense the term "white bile" is an obvious misnomer, for it is neither white nor, in view of the analysis, bile; the term has been used however in order to emphasise its relationship to the material concentrated in the gall-bladder under similar circumstances and usually spoken of as "white bile," although the words are no more appropriate here.

Conclusion.—The large bile-ducts are not mere passive tubes for the conduct of bile; they are also able in some degree to alter its composition.

BIOCHEMICAL NOTE BY DR. PATTERSON

The fluid, of which the physical characters have already been described by Mr. Lake, was submitted to biochemical examination. The following were the analytical results:—

Protein { albumin / globulin }	Nil.
Mucin	,,
Bile-pigments	,,
Bile-salts	,,
Cholesterol	,,
Chlorides	0·862% *

* Reckoned as NaCl.

At the time the sample was to hand I did not fully appreciate the nature of the fluid, otherwise a more detailed analysis would have been made. Obviously the pH value, and figures for the content of sugar, urea, non-protein nitrogen, bicarbonate, and calcium would have had considerable biochemical interest.

The fluid represents the secretion of the lining of the wall of the hepatic duct, and shows, when compared with other body fluids, greatest resemblance to cerebro-spinal fluid and tears. Like the latter fluids, it is free, or practically free, from colloidal constituents, and has a high concentration of chlorides. Similar to them therefore, it represents a close approximation to an ultra-filtrate or dialysate of blood plasma, and retains its colourlessness even when the rest of the body fluids are deeply bile-stained, selective permeability even extending to the exclusion of such readily soluble substances as the bile-salts. The chloride content is considerably above that ordinarily encountered in cerebro-spinal or ventricular fluid, with the exception of certain values encountered in cases of nephritis and uræmia, associated with chloride retention. In the absence of the corresponding figures for the plasma chlorides, it is not known whether the high figure for this "white bile" chloride is related to a high plasma

chloride. There being no reason to suppose in this case that the latter should be in any way abnormal, the high chloride content of the fluid under examination is probably more closely related to the increased pressure obtaining inside the lumen of the hepatic duct, the increased chloride tending to hold fluid against the increased pressure. The bile-pigments, &c., initially in the fluid have become lost to it, and this process in all probability is brought about by the alteration in the physico-chemical equilibrium of the fluid through stasis, leading eventually to the deposition of such colloidal constituents upon the walls of the duct, and possibly ultimately to their decomposition. For example, a slight lowering of pH, such as could result from glycolysis within the fluid, would tend to render the pigments more unstable in both the physical and chemical sense, and precipitation of pigments by such means would carry down adsorbed bile-salts.

The secretion of the fluid from the lining of the hepatic duct and the small biliary channels one would regard as a physiological process, playing its part in the maintenance of the biliary circulation, it being hardly likely that such a secretion capable of maintaining itself against considerable pressure would arise de novo to meet a new set of conditions. On the other hand, my view is that the loss of the original essential biliary constituents is a pathological process, only taking place where there is complete obstruction. A simple reabsorption of bile-pigments is quite out of the question, for the equilibrium eventually established on these lines would still leave the fluid of the duct with a certain amount of pigment in the case of a deeply jaundiced patient. Again, if such a process of reabsorption were physiological, normal plasma would certainly contain bilirubin, presumably of the "direct" (van den Bergh) type, which is contrary to actual findings. Finally, a reabsorption mechanism would clearly operate against physiological requirements which is to retain bile-pigment in the biliary channels.

"LILY RASH": AN OCCUPATIONAL DERMATITIS

A POSSIBLE PREVENTIVE TREATMENT

BY W. H. PALMER, M.B. Lond.

With a Note by JOHN FREEMAN, D.M. Oxon.

LILY-RASH is an extremely distressing and even disabling dermatitis suffered by the workers who pick the daffodils and narcissi in the early spring; and although to dermatologists on the staff of a big city hospital this occupational disease may be of little interest, it is a very serious matter to the grower and worker in the bulb-growing districts (for example in Cornwall, the Scillies, or the eastern counties). It is especially distressing to the grower if he is in a small way of business, as so many of them are; for instance in 1933 it "caused serious dislocation of the industry" (vide *Florist and Flower Grower*, March 25th, 1933).

Living far away from medical libraries I have found it difficult to trace what has been written on the subject, but through Mr. Gibson of the Isle of Scilly Experimental Station two papers were found, one by Mr. E. Philip Smith on Plant Dermatitis in the *Journal of Botany* (1920, lviii., 134), and another by D. Walsh (*British Medical Journal*, 1910, ii., 854). In the latter it is suggested that the toxic element is a member of the digitalis group and that the raphides of calcium oxalate in the sap act as abrasives on the skin. But apparently no effective treatment has been found so far.

The trouble varies from an irritating flush on the face to a generalised eczema, and individuals vary in susceptibility. Some are so sensitive that even a walk into a greenhouse containing open flowers causes an irritating flush on the face. Some are affected more by narcissus than daffodils, and vice versa. Also the disease appears to run in families.

Soon after cutting and bunching the daffodils has been begun the typical case will start as a very irritating small papular rash on forearms and hands, apparently originating in the follicles or sweat glands, or in any cuts or abrasions. The irritation is so severe as to lead to continual involuntary scratching, even in sleep, and a secondary oozing eczema develops with consequent days of discomfort and sleepless nights. This eczema may become generalised all over the body (though the arms, neck, face, and thighs seem to be the most affected) and require weeks in bed to effect a cure. Once the papular rash has appeared cure hitherto has only been effected with the aid of entire cessation of handling the flowers—which may be very awkward for a small grower with his flowers ripening, or a worker to whom it means discharge as unsuitable for the job.

It has been found that:—

1. Wet is a factor in causation, probably by softening the skin. But the handling of dry plants cannot be arranged in the fields, for beside the rain the dews are often very heavy; it is possible to be sure of dry plants only in greenhouses.
2. Protective ointments help, but do not remain on the skin long.
3. Heavy gauntlets make the hands too hot and clumsy.
4. Calcium by mouth and subcutaneously has a reputation; but I must say it has failed to have any visible action on my cases of dermatitis.

After watching many patients with lily-rash during the 1933 season it occurred to me that it might be a sensitisation disease, and if so that a desensitising agent might be found. I made many fruitless efforts to enlist interest, and then Messrs. Parke, Davis and Co. put me in touch with the "asthma" section of St. Mary's Hospital inoculation department; there they prepared for me experimental extracts from the pollen, flower-heads, stalks, and leaves of the narcissus, daffodil, and jonquil plants. These were sent to me from time to time as they were constructed in the laboratory, with the assurance that they were not generally toxic as they had been tested innocuously on normals in London.

The first objective was of course to find if these extracts would give any specific reaction suggesting sensitisation when tested on the skin. A series of intradermal tests on various volunteering flower workers in the summer of 1933 soon showed very interesting results which can be summarised as follows:—

1. Lily-rash patients, even in the off-season, gave positive skin reactions of a weal-like urticarial type to the daffodil pollen, and sometimes also to the narcissus-pollen extract; and to the extract of daffodil leaves they developed a very irritating erythematous papule after a delay of 24 to 36 hours.
2. Those who do not get lily-rash gave little or no reaction to the pollen or leaf extract; in fact, one could say in advance from the skin test whether an individual would or would not be susceptible to lily dermatitis. This is obviously useful for prognosis.

The next step was to obtain a suitable antigen for desensitisation, and enough of it for the very heavy doses recommended. While daffodil-pollen gave

the biggest skin reaction and of a type to which we are accustomed from hay-fever work, it was found not practicable to get enough of it; so it was decided to use extracts of daffodil leaves and stalks. It was necessary to proceed very carefully because, not only were we working with an unknown antigen, but since the skin reactions were of the delayed type mentioned above we were not sure how far adrenaline might serve as an antidote for an overdose.

Owing to the pressure of winter work in general practice it was only possible to try the method on the two most susceptible people—two brothers. In 1933 both had had very bad lily-rash; one had been in bed covered nearly all over with eczema for weeks, while the other had had to give up his work and remain in bed for a fortnight. Starting with 100 units subcutaneously I got no sign of reaction after doses until 700 or 800 units had been given. Unfortunately the prophylaxis could not proceed beyond a 6600 dose before the picking of the flowers began; after that time maintaining doses of 2500 to 5000 units were given as indicated throughout the picking season. I had planned to reach a much higher level of dosage, say 100,000 units, before the picking, but even the much smaller doses I reached would appear to be definitely protective. Neither brother had more than a slight rash on arms and neck; the less susceptible man remained at work all the while, and even the more susceptible (though he stopped work) did quite as much work as he had managed to do the year before and yet remained fairly free of eczema. Also with these two treated brothers the slight rash had disappeared in a day or two instead of lasting a long while after the picking had ceased. As a positive control a fellow-worker who had not been treated by inoculation had to give up midway in the picking season as he was literally unable to see out of his eyes or use his arms. The two inoculated men have no doubt of the success of this inoculation treatment though it was only half finished, and so far it seems to have protected them against the narcissi also. In previous years all the usual remedies had failed completely.

To sum up: (1) From the clinical signs and the skin tests it would appear that lily-rash is a sensitisation disease. (2) That a vaccine from daffodil stalks and leaves holds out great promise of being a preventive inoculation. (3) Inoculation on many susceptible individuals should be done next winter to test out the method further; and it is with the hope of such being done that these notes have been written.

I should like to thank Dr. John Freeman and the inoculation department of St. Mary's Hospital for their help and suggestions. Without them even the present stage could not have been reached.

Hayle, North Cornwall.

TECHNICAL NOTE BY DR. FREEMAN

This lily-rash is very interesting, and is well worth the study, I believe, of "dermatologists on the staff of big city hospitals"—for pathological reasons if for no other.

The quick skin reaction with the pollen and the delayed reaction with the stalk extract is curious; I have twice got the same delayed eczematous reactions with chrysanthemums in the case of London flower-shop workers, and one would give a great deal to know just what is the pathological difference between the quick reaction of say grass-pollen in hay-fever and the slow reaction of tuberculin in a Pirquet reaction.

The "units" spoken of in Dr. Palmer's paper are similar to those of grass-pollen vaccine for hay-fever or horse-scurf vaccine for horse asthma—i.e., one gramme of the parent substance is taken to yield a million units of the antigen. The system of desensitisation employed was that of heavy desensitisation for hay-fever—i.e., an increase of 15 per cent. is made on each preceding dose; the number of units injected should mount up in this way till the patient will no longer give the specific reaction on the skin. The frequency of the inoculations can be made to suit the convenience of the inoculator and the exigencies of the case—i.e., from once a week down to once every three hours.

Those who have attempted it will smile sympathetically at the fruitless efforts at collecting enough daffodil pollen. But I am not sure that Dr. Palmer is not dealing with two "diseases": the pollen sensitisation which is probably trivial in its effects, and the stalk sensitisation which is responsible for lily-rash. I shall look forward with great interest to the results of his next year's venture.

Clinical and Laboratory Notes

A SIMPLE METHOD OF ESTIMATING THE SEDIMENTATION-RATE OF THE RED BLOOD-CELLS

BY CHRIS. J. MCSWEENEY, M.D. N.U.I., M.R.C.P. Irel., D.P.H.

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THE diagnosis of juvenile rheumatism, more especially in the early stages of the disease before any serious damage has been done to the heart, is often very difficult. The clinical picture, definite enough when there is a background of established valvular disease, is in these early days frequently equivocal, and the practitioner finds himself in genuine doubt as to the existence of the disease at a time when treatment with a view to preventing permanent cardiac lesions is likely to be most efficacious. In recent years various efforts have been made to devise some method whereby this indefinite clinical background might be brought into clearer perspective, and of these undoubtedly one of the most useful has been the estimation of the sedimentation-rate of the erythrocytes of the blood.

The object of this note is to describe a simple and practical method of performing this estimation which has been devised with the help of Dr. Parry Morgan, lecturer in bacteriology in the Welsh National School of Medicine. It is to some extent a modification of that practised by Payne[1] at Great Ormond-street Hospital, and shares with his the advantage of avoiding venepuncture, a procedure often difficult in young children, and not always practicable in private practice or even out-patient departments, more especially if the test has to be performed frequently.

The following is a brief description of the method:—

(1) The fully extended finger or thumb, which has been rubbed with spirit, is bandaged firmly with a piece of stout tape (½ in. wide in the case of older children, ¼ in. for younger), the first turn of the bandage passing transversely across the most distal joint, and the second and third turns being superimposed in figure of eight fashion.

(2) The bandaged finger is strongly flexed and pricked with a surgical cutting needle.

(3) By means of an automatic pipette (described below) one volume of a 3·8 per cent. solution of sodium citrate and four volumes of blood are successively taken up and expelled on to a hollowed glass slide.

(4) Should the flow of blood from the puncture be insufficient to allow the requisite number of volumes of blood to be taken up the bandage is released, the finger wiped clean, re-bandaged in the extended position, and again flexed when the required amount will be obtained. The bandage may be undone and reapplied several times, if necessary, without the need for a fresh puncture arising.

(5) By means of the pipette the blood and citrate are thoroughly mixed in the hollow of the glass slide, care being taken not to introduce air bubbles.

(6) A capillary tube about 6 in. in length and 1 mm. in bore is now laid along a millimetre scale ruler and marked (conveniently with a skin pencil) at a distance of 100 mm. from one end.

(7) The end of the capillary tube furthest away from the mark is then placed in the citrated blood at an angle of approximately 45° and the blood allowed to run up the tube by capillary attraction. The speed with which the blood is sucked up the tube may be accelerated by holding the tube at a more acute angle or by tilting the slide.

(8) When the citrated blood has reached the pencilled mark, the capillary tube is withdrawn and the moist end wiped in a wisp of cotton-wool. There is then a column of citrated blood 100 mm. in length and 1 mm. in diameter in the tube and this is now allowed to take up a central position leaving both ends of the tube clear.

(9) The tube, held in the horizontal position, is pushed gently but firmly through a lump of plasticine which seals one end, and then with the sealed end uppermost the tube is stuck vertically into the plasticine and allowed to stand in this position in a cool place.

(10) At the end of an hour the height of clear fluid is measured in millimetres, the reading obtained giving the sedimentation-rate of the red cells.

The test as above described has been carried out upwards of 1500 times without difficulty and, apart from the assistance it gives in the diagnosis of subacute cases, it has been of special service in assessing the response to rest of patients under treatment for juvenile rheumatism. Normal children and rheumatic children during a quiescent period give readings of 10 mm. or less, readings of 20–30 mm. are obtained usually in subacutely active cases, while in the acute forms of juvenile rheumatism readings of from 30–70 mm. are to be expected. A curious feature, already commented upon by Warner,[1] is the failure of the sedimentation-rate to rise in cases of pure chorea unaccompanied by articular manifestations or carditis. In several cases of severe chorea coming under treatment readings of 2, 3, and 4 mm. were obtained, but in some of these higher readings were given later pari passu with the development of carditis. Fortunately in these patients who give low readings the clinical picture is so definite as not to require corroboration.

The *automatic pipette* with which these estimations were carried out was of the mercury and cotton-wool type originally suggested by the late Prof. B. J. Collingwood, the principle being that the amount of fluid taken up and delivered by the pipette is regulated by the excursion of a column of mercury between two plugs of cotton-wool inserted into the proximal end of the pipette. The distance between the cotton-wool plugs may be fixed so that the pipette delivers 20, 25, or 30 c.mm. as required. An automatic pipette of this type fixed to deliver 25 c.mm. serves admirably, but the method can be employed quite satisfactorily using an ordinary pipette marked with a file at 25 c.mm. If an automatic pipette of 20 c.mm. is used, it is better to take five volumes of blood to one of citrate as otherwise there is some risk that the citrated blood may be insufficient to reach the 100 c.mm. mark on the capillary. The very slight difference in the erythrocyte sedimentation-rate which this higher dilution of blood gives is of no practical significance although, strictly speaking, the normal limit with the 5 : 1 dilution should be placed a few millimetres higher than 10.

If a capillary tube, slightly expanded at one end so as to slip over the distal end of the automatic pipette, is firmly jointed thereto with sealing wax, one pipette can be used indefinitely. After each test the soiled end of the capillary attachment is snipped off, and a fresh capillary is fitted on when required. The capillary attachment may be long enough to allow four or five tests to be carried out before the need for fitting on another arises.

An ingenious and handy modification of the fixed pipette above described is Dr. Parry Morgan's adjustable pipette which will take up and deliver any desired small volume of fluid according as the position of the proximal cotton-wool plug is altered by means of a thin steel wire, one end of which is buried in the plug, the other being enclosed in the teat. The whole outfit for estimating the sedimentation-rate by the method above described may be improvised at a cost not exceeding a shilling.

REFERENCES

1. Payne, W. W.: THE LANCET, 1932, i., 74.
2. Warner, E. C.: Proc. Roy. Soc. Med., 1934, xxvii., 963.

INTRAVENTRICULAR HÆMORRHAGE

BY C. L. COPELAND, M.B. Liverp., D.P.M.
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APART from the comparative rarity of the condition, the interest of this case lies in the fact that its course was observed from within a minute of onset, in the differential effect on the respiration and heart, and in the severity of the lesion.

A labourer, aged 51, was admitted into Wakefield Mental Hospital on Oct. 16th, 1914, suffering from melancholia. On admission "arterial thickening and increased tension" were noted. The Wassermann reaction in blood and cerebro-spinal fluid was negative. At first agitated, worried, and full of ideas of unworthiness, he passed over into chronic mania by 1921, when he was noted as being continually excited by auditory hallucinations and his memory was failing. By 1930 he was a frank case of arterio-sclerotic dementia. He was dull, childish, talked rambling nonsense all day, and could give no account of himself at all. He remained in this state till his death on June 11th, 1934, in remarkable circumstances, at the age of 70.

On Jan. 19th, 1934, there had been a warning in the form of a fit of epileptic character—clonic movements of whole body followed by short mental confusion, but no apparent after-effects. On June 11th, at 12.25 P.M., he was sitting outside his ward in which I was doing my round. He attempted to vomit, but had an empty stomach, and he crumpled up on to the bench. His eyes were rolling as he was lifted to the ground. His face was pale, and he made no attempt at respiration. A finger down his throat established the absence of both obstruction and the pharyngeal reflex. His pupils were equal and of average size, the conjunctival reflex was absent, and there were no tendon-jerks. He showed complete flaccid paralysis. In the minute required to carry him into the ward he became cyanosed but his heart was beating strongly at an estimated rate of 60. As no respiration had occurred, artificial respiration was started, and the air passed freely in and out, but he never made any attempt at breathing on his own, and by 12.43 his apex-beat was no longer palpable, but as the heart sounds could still be heard, artificial respiration was continued. There had been profuse sweating, and he now lost all colour. By 12.45 the pupils dilated and the heart stopped.

At the post-mortem examination next day, on removing the cranium and dura, there was no cerebro-spinal fluid,

and the convolutions were much flattened. The right half of the dura showed eight warty growths firmly attached (shown by section to be fibromas) varying in size from a cherry down to a small pea, each with a pocket in the bulging brain. The cerebral arteries were grossly atheromatous, and hæmorrhage could be seen beneath the pia-arachnoid bulging out through the roof of the fourth ventricle on to the surface of the cerebellum. There was a well-marked pressure cone. After hardening the brain, a beautiful specimen was obtained showing a cast in blood clot of all the ventricles complete except for the tip of the left posterior horn. The clot in the fourth ventricle bulged over the inferior cerebellar peduncles on to the surface of the cerebellum, where it was stripping up the pia-arachnoid. The aqueduct of Sylvius was distended, its walls softened and partly destroyed for ¼ in. depth, especially on the left side, giving it the appearance of being displaced to the right. No hæmorrhage was present on the spinal cord. The aorta showed atheromatous patches, the left kidney was 1½ in. long, and the right undersized.

The source of the hæmorrhage could not be determined without destroying the specimen, but it appeared to have originated in the walls of the aqueduct. It is probable that the artificial respiration helped to produce so complete a specimen. It must be rare to watch the progress of such a hæmorrhage from start to finish. The complete cessation of respiration with a strongly beating slow heart was most striking. The pressure cone prevented extension of the blood down the spinal cord.

I am indebted to the medical superintendent, Dr. C. J. Thomas, for permission to publish this case.

MEDICAL SOCIETIES

ROYAL SOCIETY OF MEDICINE

SECTION OF ORTHOPÆDICS

A MEETING of this section was held on Oct. 2nd, when Mr. ALAN H. TODD delivered his presidential address on the

Treatment of Pes Cavus

Mr. Todd said that some 15 years ago his attention was directed to pes cavus by the observation that none of the methods, conservative or operative, used in its treatment gave a lasting result. The fault obviously lay in a failure to cope with the fundamental cause of the condition, which sooner or later brought about relapse though the visible deformity might have been corrected. In the ordinary "idiopathic" type of pes cavus two facts were constant and therefore noteworthy: (*a*) the deformity consisted essentially of the dropping down of the forefoot and was confined to that part of the foot; and (*b*) paralysis of the lumbrical or of the interosseous muscles was never found at operation. Contracture of the tendo Achillis when it occurred was secondary, not primary; it was never present in the earlier and milder cases, and not always even in severe pes cavus. The American teaching that contracture of the tendo Achillis was the fundamental cause of pes cavus was manifestly wrong; a tight tendo Achillis gave rise to the opposite condition of flat-foot.

The fallacy that the lumbrical muscles, or the interossei, or both, were wasted in pes cavus should be discarded. The interossei might well be responsible for the production of the claw-toe element in the deformity, but in Mr. Todd's view the part played by them was purely passive; the heads of the metatarsal bones dropped down below their normal level, and so altered the line of action of these short muscles that they necessarily pulled up the proximal interphalangeal joints of the toes. As to the connexion between the dropping down of the forefoot and pes cavus, it was true that severe drop-foot due to infantile paralysis seldom seemed to lead to pes cavus. But the theory that an important if not the essential factor in the causation of pes cavus is weakness of the extensor group of leg muscles had been confirmed by observation of many cases, of which the most striking was that of a mechanic in the Royal Air Force. This man, who had normal feet on enlistment, sustained a transverse cut across the front of his right leg. This cut damaged the extensor tendons but no other structure; some sepsis ensued, and the tendons became more or less bound down, so that their extensor action was much weakened, and the patient was unable voluntarily to pull up his toes or the forefoot. A typical right pes cavus developed, with dropped-down forefoot, plantar callus, retracted toes, and so forth. Murk Jansen some years ago had suggested that pes cavus should be treated by transplanting the extensor tendons to the necks of the metatarsal bones, and this procedure in Mr. Todd's hands had given more lasting results than other operations.

The ideal operation for the permanent cure of the deformity in pes cavus must consist of two distinct parts: (1) the correction of existing deformity; and (2) the adoption of measures designed to prevent recurrence. Mr. Todd described in detail the procedure adopted by him. Mere non-selective elongation of the structures of the sole was inadequate; those on the inner side must be lengthened and flattened more than those on the outer side, therefore the joint capsules, fasciæ, and tendon sheaths were divided as freely as possible by open operation on the inner side of the foot. Steindler's section of all structures attached to the os calcis then allowed the whole sole to elongate; this was followed by vigorous manipulation to complete the first stage of the operation. The extensor tendons were then transplanted into holes bored through the necks of the metatarsal bones (Murk Jansen's operation modified) and were sutured, the foot being held in an over-corrected position. If the toes were contracted and the measures adopted did not correct the deformity, arthrodesis of the proximal interphalangeal joints was performed and the fifth toe might be amputated. No splint was used. As soon as the wounds were strongly healed the patient was encouraged to walk.

Mr. Todd had not yet quite decided the best age for performing this operation; his practice had been to temporise with milder measures—notably the routine stretching of the toes—until the patient was 16 to 18 years old. But he was now testing the suggestion that in neglected cases the operation should be performed earlier—i.e., at any age after 12 to 14 years—especially in the presence of thick horny plantar calluses which might later become septic. In children the disability caused by pes cavus seemed to vary, but in adults it was always a seriously crippling condition, far more disabling than flat-foot, and active treatment should be given. The operation described was appropriate to adolescents, and to all adult cases but the septic and the ultra-

contracted and fibrotic. In cases of pes cavus due to infantile paralysis, it was, of course, useless to transplant extensor tendons if their muscle-bellies were paralysed. For elderly persons with very contracted feet the complete operation was unsuitable, but a vigorous stretching under anæsthesia—perhaps even the cautious application of the Thomas wrench—seemed to afford satisfactory relief even if no material improvement in the appearance of the feet resulted. The results of the standard operation described seemed to be quite permanent. The toes, if not quite down after operation, tended gradually to come down and to regain their function; pain under the anterior arch and callus disappeared and the walking capacity improved greatly. Patients had reported ability to walk "for miles" and to follow arduous occupations. The theories upon which the treatment was based might or might not be correct, but the operation had been found to provide a rational, effective, and permanent cure for pes cavus.

REVIEWS AND NOTICES OF BOOKS

Recent Advances in Allergy

Asthma, Hay-fever, Eczema, Migraine. Second edition. By G. W. BRAY, M.R.C.P. Lond., Physician to Children's Department, Prince of Wales's Hospital; late Asthma Research Scholar. London: J. and A. Churchill. 1934. Pp. 503. 15*s.*

THE second edition of Dr. G. W. Bray's book will be welcomed. Protein hypersensitiveness falls naturally into three subdivisions—anaphylaxis, bacterial allergy, and the conditions which Dr. John Freeman has called the toxic idiopathies. It is with this last group, which includes asthma, eczema, migraine, and related conditions, that Dr. Bray's book is mainly concerned. Perhaps the greatest recent advance in allergy is its general recognition as one of the important sources of common human ailments, and Dr. Bray gives an able description of the manifestations of protein hypersensitiveness, their frequent hereditary background, and the factors which predispose to their appearance. He is over-optimistic on the results of treatment; to say that "nowadays most allergic manifestations at all ages are amenable to cure" is unfortunately untrue. The triumphs of the allergic hypothesis have been mainly on the diagnostic and nosological side, and the cure of asthma still awaits discovery.

The chief fault of the book, which has been aggravated in the second edition, is that it remains the raw material for a good book rather than a finished work. Dr. Bray says that he has added 700 fresh references, but he would have done better to subtract an equal number. Many paragraphs are a succession of conflicting opinions or pointless references—the sections on the bacteriology of the sputum and vaccine therapy in asthma are particular examples of this lack of synthesis. When the author summarises a question and draws a reasoned conclusion he is admirable, but only too often he fails to do so and the material suffers for want of inward digestion. In future editions it might be wiser to limit the discussion of subjects such as serum sickness and bacterial allergy to a brief reference in the introductory chapter. These subjects could be better dealt with elsewhere in the Recent Advances Series, and more space might then be devoted to the description of the technique of skin-testing, the indications for and advantages of the various methods, the exact preparation and sterilisation of the testing fluids, and the critical strengths in which they should be employed. In hospital practice at any rate it is better and cheaper to make the solutions in the laboratory than to buy them. A fuller description of the preparation of desensitising solutions and their dangers would be helpful. The industrial aspects of allergy and non-protein idiosyncrasies might also be more fully developed. When all this is said, Dr. Bray's book remains one of the best accounts of allergy in our language. It is far less pretentious than most of the American treatises and far more balanced than the general run of British productions on this difficult subject.

Allergy in Relation to Lymphadenoma

By G. P. CHANDLER, M.D. Cantab., M.R.C.P. Lond. London: John Bale, Sons and Danielsson, Ltd. 1934. Pp. 104. 10*s.* 6*d.*

IN this little book Dr. G. P. Chandler describes his unsuccessful attempts to obtain specific skin reactions in Hodgkin's disease. He points out that every kind of organism which has been suggested as the cause of Hodgkin's disease has been found capable of producing an allergic type of reaction in the host, which can be demonstrated by skin reactions. The tuberculin test is the prototype of these skin reactions but isolation of the infective agent is not essential for their demonstration. In lymphogranuloma inguinale a specific allergic reaction has been obtained by using emulsions of the affected glands as antigen, although the causative organism of the disease has not yet been identified. Dr. Chandler prepared his antigens by extracting gland tissue obtained from active cases of Hodgkin's disease. The extracts were prepared in a variety of ways and were tested on a series of cases of Hodgkin's disease which included every stage of the disease. The results were uniformly unsuccessful, and attempts to demonstrate immune bodies in the sera were equally unsuccessful. Negative results of this type are valuable, but it is doubtful whether their importance justified the publication of a 100-page monograph; they are not held to provide convincing evidence against the infectious origin of Hodgkin's disease.

Postures and Practices during Labour among Primitive Peoples

By JULIUS JARCHO, M.D., F.A.C.S. New York: Paul B. Hoeber, Inc. 1934. Pp. 175. $3.50.

THIS book may be described, in the terminology of the geologist, as a "conglomerate" composed of chapters on parturition in monkeys and postpartum gymnastics bound up in a matrix of anthropological and obstetrical curiosities. Dr. Jarcho says its purpose is "to transmit to modern obstetricians the application of those postures and practices utilised to advantage by primitive peoples in coping with their obstetric problems." This statement holds good for one chapter only, entitled Primitive Postures in Labour with Modern Scientific Adaptations. It is certainly by far the longest chapter, containing half of the textual matter, and as the vehicle for his objective chiefly calls for notice.

Put briefly, Dr. Jarcho's thesis is that primitive women assume the sitting, kneeling, or squatting positions during labour, rather than the recumbent posture, which deprives them of the pressure of the

thighs against the abdominal walls. To develop this argument the reader is taken a world-trip from China to Peru and offered an historical view of obstetric practice from the scriptures and ancient mythology through Hippocratic succussion and its equivalents in later times and in aboriginal races to the obstetric stool or chair, thus leading up to suggestions for the better conduct of labour in civilised women. The possible modifications in posture advocated by Dr. Jarcho are worthy of attention, especially the use of the squatting position by the parturient woman holding on to the rail at the foot of the bed with the abdomen resting on the flexed thighs; also the rocking-chair and the gynæcological table with crutches adapted to allow of delivery in the exaggerated lithotomy position and the raising of the os pubis, so as to increase the diameter of the outlet during the birth of the head. The most practical of these would seem to be the rocking-chair, which the patient is encouraged to use till delivery is imminent. In the early stages she walks about but rests at intervals in the chair, leaning back and putting her feet up on a stool or step, and thus can sit back with the knees flexed and thighs elevated to support the abdomen and pull on the side-rests till labour is well advanced. This plan may partially meet the difficult problem of the cultured woman who is readily fatigued by unaccustomed postures and demands anæsthesia during the actual birth. The obstetric table and lithotomy position are too uncomfortable and too productive of fear to be of value except for the anæsthetised patient in whom voluntary efforts are in abeyance.

Little need be said of the other chapters in the book, for they have no bearing on its "purpose." The final one on postpartum gymnastics contains an excellent description of exercises and resisted movements designed to improve the abdominal and pelvic musculature and lessen subsequent disability. These exercises are acknowledged as having no relation to the postures and forms of massage adopted by primitive races. The only other chapter that has any logical connexion with the author's avowed object is an interesting one, illustrated by photographs, on practices and postures in labour among primates.

Except for the adaptations mentioned, text and illustrations on anthropological matters are compiled from such well-known authorities as Witkowski, Engelmann, Ploss, and the Bartels, and fully acknowledged in an extensive bibliography.

The Twilight of Parenthood

By ENID CHARLES, M.A., Ph.D. London: Watts and Co. 1934. Pp. 226. 2s. 6d.

THIS is one of the most interesting and stimulating books which have recently appeared on the population problem. Its general thesis is that though a comparison of the crude birth- and death-rates shows that the population of this country is still increasing, the figures, when analysed by refined statistical methods which are described at some length, actually suggest that the birth-rate has now fallen to about 75 per cent. of the replacement-rate. Within a calculable period in the near future, then, the population will become stationary, and then begin to decline. Developing this argument Dr. Charles clearly derives enjoyment from tilting at Malthus, eugenists, and the capitalist system. Her book consists of six chapters. In the first a savage attack is developed upon Malthus's celebrated generalisation about the relation of population to food-supply. A lucid and erudite summary is given of the means recently discovered by chemists, geneticists, entomologists, immunologists, and others for increasing the available food-supply of the world, and the conclusion is reached that it would be "hardly an exaggeration to say that the world's food production could be increased many times, without increasing the area of cultivation, if mankind exploited to the fullest extent all the scientific knowledge already available." The second chapter, in which is reflected the author's training as a statistician, deals somewhat technically with the different methods of calculating the potentialities of growth of a given population. The reader is introduced to such concepts as standardised mortality- and fertility-rates, and to Kuczynski's gross reproduction-rate, in which is calculated the number of girl children born to the average woman in a given community, throughout her reproductive life, on the basis of the fertility-rates prevailing in that community at that time. There follows an examination of the actual present-day trends in population observable in the different countries of the world which leads to the conclusion that, apart from India and China with regard to which the relevant statistics do not exist, the countries with the greatest potentialities of growth are Russia and Japan. In subsequent chapters are discussed the eugenic implications of the differential birth-rate (by which Dr. Charles is not in the least alarmed), the spread of contraceptive practices, and, lastly, the various measures which might be taken to stimulate fertility in a "planned œcology."

The book is well put together, and to each chapter the author brings a fresh point of view as well as a wide erudition. It is certainly a book that doctors should read, especially those engaged in public health activities.

Alcohol and Anæsthesia

By W. BURRIDGE, D.M., M.A. Oxon., Professor of Physiology, Lucknow University. London: Williams and Norgate Ltd. 1934. Pp. 65. 2s. 6d.

IN this book Prof. Burridge challenges the whole fabric of orthodox physiological teaching on alcohol. He applies to this aspect of pharmacology two novel principles which in his former works have been expounded in detail. Central neurones, he says, are rhythmically active structures which possess two sources of potential for their energy manifestations, and the physiological basis of an idea is a group of nerve-cells rhythmically active in unison. Though alcohol is considered by the orthodox to produce only two modifications of the activities of such a system, he maintains that in an organ of limited type these activities provide an infinite variety of change. He deduces from his experiments that the artificial depression caused by alcohol continues to operate simultaneously with the subsequent recovery process, a result which conflicts with current theory. His view is that the properties of muscle and nerve depend on the properties of the colloidal system which constitutes them. The energy manifestations of these systems come from aggregation changes and adsorption changes. The former change is slow or "hysteresial"; the latter is rapid. Small amounts of alcohol stimulate through the hysteresial type of change, but as the strength of the drug is increased a depressing influence becomes definite. Eventually depression overwhelms stimulation. Of anæsthesia he says that, so far from being a condition of generally depressed activity, it is a feverish activity of central neurones and end-organs with an altered balance of kinesiphores.

THE LANCET

LONDON: SATURDAY, OCTOBER 6, 1934

DIATHERMY IN CANCER

THE diathermy knife has become a recognised instrument of surgical treatment, mainly in the extirpation of malignant tumours, for which purpose it is now chiefly employed. What precisely are the indications for its use, and any limitations it may have, should now be apparent in the experience of those who have used it extensively. In a paper which appeared in two recent issues of THE LANCET (pp. 633 and 694) Mr. NORMAN PATTERSON relates 109 cases of malignant neoplasms of the mouth, nose, and pharynx, in which more than five years ago he used the diathermy knife. In his view its main advantages over cold steel are these: avoidance of the implantation of cancer cells in the wound and their dissemination through veins and lymphatics; diminution of hæmorrhage during operation, and therewith a clearer field and no shock from loss of blood; destruction of tissues, which may contain cancer cells, beyond the actual site of section; and sterilisation of the wound. Of these the avoidance of disseminating cancer cells throughout the body is far the most important. It is true also that bone which has been invaded by growth, or which is dangerously near to it, can be destroyed by the use of the diathermy button, but the resulting necrosis may take many months to separate and the method is not suitable for regions such as the interior of the larynx, the pyriform fossa, or the post-cricoid part of the pharynx, where cartilage or considerable bony structures must be removed. For tumours of the maxillary antrum and the ethmoid region, Mr. PATTERSON advocates a combination of the diathermy knife with ordinary surgical methods, using the current for all dissections of the soft parts in order to obviate bleeding, but incising the skin with a scalpel and removing bone with saw and chisel. He then goes further and applies the diathermy button to the cavity left after removal of the tumour, and to all bony edges, as he considers that by this means the chance of recurrence is diminished and that this outweighs the disadvantage of the resulting sequestra.

In the treatment of cancer of the upper air-passages, we are still in need of that precise knowledge which will enable us to decide, in any individual case and in any given region, whether radium, X rays, surgical excision by cold steel or by diathermy knife, offers the most prospect of cure. In many cases the best results will only be obtained by a combination of two or more of these methods; in some indeed only by combination of them all. Dr. A. ZUPPINGER (Zürich) tells us[1] that little is now heard of radical operations for carcinoma of the pharynx; Dr. ELIS BERVEN (Stockholm) has made a similar statement[2] in regard to growths of the tonsil, and Dr. JAMES DUFFY (New York) considers[3] the results of surgical extirpation so bad that tonsillar carcinoma at any stage should be classed as surgically inoperable. Mr. DOUGLAS HARMER[4] also regards tonsillar growths as so malignant that simple removal with the knife ought never to be attempted; he considers diathermy much safer and combines it himself with radiation. Mr. PATTERSON employs a combination of these methods in suitable cases, and his results are relatively good. But he groups together tumours of the tonsil, faucial pillars, and soft palate because in advanced cases it may be impossible to ascertain the exact site of origin. In view of the extremely bad prognosis in tonsillar growths submitted to operation, it would be of special interest to have Mr. PATTERSON'S experience of diathermy when the tumour demonstrably arises from the tonsil. For the treatment of cancer of the anterior part of the tongue diathermy excision appears to be an improvement on former methods, and it has brought into the realm of practical surgery those cases where the floor of the mouth is involved. In the posterior part of the tongue the tumour is usually highly malignant and secondary deposits in the glands are generally early and extensive; here surgery has proved valueless and, unfortunately, this is also a less favourable site for treatment by radiation. Whatever has been done, less than 10 per cent. of the patients live for three years. Mr. PATTERSON reports good results in the treatment of a few malignant growths on the inner aspect of the cheek by a technique of his own. His method is to dissect up a skin flap and replace it after the growth has been removed by the diathermy knife; this avoids leaving a large hole from the face into the mouth. While diathermy has the great advantage of giving a bloodless field it by no means ensures the patient against the danger of post-operative hæmorrhage, and this he finds especially liable to occur after excisions in the anterior part of the mouth, although this has not been the experience of other surgeons.

Mr. PATTERSON'S review of the abundant clinical material which has passed through his hands will help to convince many who have hitherto been content with the older surgical methods; but perhaps he hardly states the case strongly enough for the use of the diathermy knife in cancer. He might have gone further and have boldly asserted his doubt whether the use of cold steel can now be justified in view of the risk of dissemination of cancer cells when it is used. On the other hand, he has perhaps hardly made it sufficiently clear that even the diathermy knife can only remove the tumour so far as it is accessible, and if it is intended to destroy cells lying beyond the

[1] Maligne Pharynx- und Larynxtumoren. Leipzig. 1931.

[2] Acta Radiologica, suppl., xi., 1931.

[3] Surg., Gyn., and Obst., 1932, liv., 539.

[4] Relative Value of Radiotherapy in the Treatment of Cancer of the Upper Air-passages. London. 1932. See THE LANCET, 1931, ii., 1057.

actual site of section something more is required. In any case the incisions must be planned with a margin of half to three-quarters of an inch beyond the apparent edge of the growth, as in similar operations with the knife, if a good result is to be expected.

INHERITANCE OF RESISTANCE TO INFECTION

THE inheritance of resistance, or of susceptibility, to infective disease is a question that concerns the clinician, the epidemiologist, and the laboratory worker. That genetic factors are concerned in resistance we cannot doubt. We have ample evidence that in this character, as in others, one animal species differs from another; and clinical experience clearly supports the reasonable biological assumption that, within a single species or race, one individual differs innately from another in susceptibility to a particular infective disease or group of diseases. But acceptance of the view that genetic differences in resistance exist does not take us very far; and as soon as we begin to seek more detailed information we find little but confusion and ignorance. The Medical Research Council have published, as the latest of their special report series, an admirable survey by Mr. A. BRADFORD HILL, D.Sc.,[1] which shows clearly and concisely why this ignorance and confusion still exist, and how best we may escape from them. That the only hopeful method of approach is that of direct experiment has, of course, been generally realised; but the extreme difficulty of the experimental method as applied to this particular problem, and a fairly common failure to guard against the many possible pitfalls, have seriously hindered progress. Taking the simplest problem first—the clear experimental demonstration of those individual differences in genetic resistance that almost certainly exist—there are many obstacles to be surmounted. The straightforward, common-sense method is to infect a number of animals with a dose of bacteria that will kill some of them, but not all, breed from the survivors, submit the offspring to the same test, and so on through a number of generations. Of the original parents, those that survive will, by hypothesis, owe their survival in some part at least to a heritable resistance, and this they will pass to their offspring. If these genetic factors increase resistance to a significant degree the first selected generation will show a higher average resistance than an unselected group of the same animal species and strain; and continued selection in successive generations will increase resistance up to some unpredictable limit. This method has, in fact, been very commonly employed; but it lies open to many fallacies. The method of selection involves the infection of the parents of each generation with the bacterium or virus understudy. Those parents that do not die will not be unaffected by this procedure. Many of them will contract a non-lethal infection that will add an acquired active immunity to the genetic resistance that may, or may not, have determined their survival. This acquired immunity may be passed on to their offspring in two ways. The females, at least in mammalian species, will pass specific antibodies to their young via the placental circulation before birth and in the colostrum during the early days of extra-uterine life, so that many of the new generation will be protected for some weeks by a passive congenital immunity. Both males and females, some of whom will certainly be carriers of the infecting organism, may pass this infection to their young, perhaps during the period when these are partially protected by a passive immunity, and in so doing they will induce an active immunity that will persist well beyond the period of the next test and the next mating; and at each such test the infecting organism will be reintroduced into the breeding stock, and the immunising process will be repeated. We may, then, neglect those experiments in which this obvious source of error has been ignored. Many workers have, however, recognised it and have attempted to eliminate it by various devices. Much of Dr. HILL'S report is devoted to a discussion of the degree to which these devices have succeeded. He concludes that some of the results recorded lend strong support to the view that a true genetic immunity may be developed by selective breeding; but he shows clearly how difficult it is to establish a case that is beyond criticism.

Accepting the existence of genetic immunity as proved beyond reasonable doubt, what of its degree? There are tallish men and shortish men, but not many giants or dwarfs. Does genetic immunity vary in this kind of way, so that some individuals are rather more susceptible than the average and some rather more resistant, or can we envisage the development by selective breeding of a strain that will withstand all risks? Some workers, at least, have included in their "resistant" category animals that showed but a slight departure from the average, in that they took a little longer to die. In other instances, however, there has been a significant, and occasionally a large, difference in the proportion of deaths in selected and unselected groups; but there is not, in the evidence as yet available, any indication of the development of a complete and uniform resistance, even when the test applied is the injection of a dose of bacteria that fails to kill all the animals in the control unselected group. The development of a breed of animals that would solidly withstand all risks of natural contact infection clearly demands a larger measure of success than the experimentalist has yet attained. Is this genetic resistance dependent on narrowly specific reactions of the kind involved in acquired active or passive immunity, or does it depend on quite different factors that are operative over a much wider range? Apart from its biological interest, this problem has severely practical implications, if we are to consider seriously the possible application to animals of genetic methods of controlling infective disease. To treat each of our

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UVEO-PAROTID TUBERCULOSIS?

THE strange syndrome known variously as uveo-parotitis, uveo-parotitic polyneuritis, febris uveo-parotidea, and uveo-parotid tuberculosis was first described by HEERFORDT in 1909. It seems to be a definite clinical entity and it is seen chiefly in those under 30 years of age, women being affected twice as often as men. There is a short prodromal period with malaise, mild fever, sometimes night sweats, and frequently skin eruptions, among which erythema nodosum is common. The presenting symptom as a rule is visual impairment due to some inflammatory lesion of the uveal tract, usually an iritis. Soon afterwards swelling of the parotid gland appears, bilateral or unilateral, the gland being tender but not painful. The submaxillary glands may also be involved, as in the case reported in our present issue by Dr. ESMOND REES, and occasionally the implication of the lacrymal glands gives rise to Mikulicz's syndrome. Facial palsy occurs in a large proportion of cases and may develop before, with, or after the parotid swelling; it may be on one side or both and it has been attributed to pressure on the facial nerve by the enlarged gland, although in two cases there has been evidence of a lesion of the chorda tympani. Less often polyneuritic signs have been present, either cranial (as in Dr. C. B. V. TAIT'S case) or more extensive; rarely the polyneuritis has dominated the clinical picture, and an example of this type is provided by the first of the two cases now described by Dr. H. G. GARLAND and Dr. J. G. THOMSON. Less common findings are splenomegaly and generalised enlargement of lymph glands. The fact that some of the patients have no pyrexia discredits HEERFORDT'S original name of febris uveo-parotidea. The tendency is towards spontaneous recovery—although this seems less true of the ocular lesions than was formerly supposed—and only four deaths have been reported. In three of these autopsy revealed miliary tuberculosis.

Argument has raged for many years over the cause of this condition. HEERFORDT originally suggested that it was a complication of mumps, but there is no evidence to support his contention. Syphilis, beri-beri, oral sepsis, and diphtheria have all had their advocates, but none of them seems to need serious consideration. S. BANG held in 1918 that the underlying cause is pseudo-leukæmia, a term which no longer has any exact connotation for the hæmatologist. Actually the ætiological problem appears to have resolved itself into the question "Is uveo-parotitis due to tuberculosis or is it due to some unknown infective agent?" Clinically it runs so true to type that it is hard to think of it as arising from different morbid processes; its natural history suggests that it is a pathological entity. In a previous paper GARLAND and THOMSON have arrayed a good many facts which point to tuberculosis as the cause; in three of the four fatal cases death was due to generalised tuberculosis; biopsy of the parotid glands has, they claim, always provided histological evidence of tuberculosis of the fibrosing endothelioid type; and injection of biopsy material in one case produced fatal tuberculosis in a guinea-pig. Collateral evidence of tuberculosis is even commoner; a tuberculous family history, pleural effusion, radiological evidence of phthisis, cervical adenitis, and cutaneous tuberculides figure frequently in case reports. A scrutiny of the recorded cases suggests that if evidence of tuberculosis is carefully sought it is usually to be found, and further that many of those reported have not been investigated with enough completeness to exclude it. This criticism is applicable to Dr. TAIT'S case—though he thinks it unlikely that his patient's polyneuritis could be tuberculous—while in the reports from Dr. REES, Dr. LLOYD DAVIES, and Drs. GARLAND and THOMSON all the cases have features suggestive of tuberculous infection.

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Argument has raged for many years over the cause of this condition. HEERFORDT originally suggested that it was a complication of mumps, but there is no evidence to support his contention. Syphilis, beri-beri, oral sepsis, and diphtheria have all had their advocates, but none of them seems to need serious consideration. S. BANG held in 1918 that the underlying cause is pseudo-leukæmia, a term which no longer has any exact connotation for the hæmatologist. Actually the ætiological problem appears to have resolved itself into the question "Is uveo-parotitis due to tuberculosis or is it due to some unknown infective agent?" Clinically it runs so true to type that it is hard to think of it as arising from different morbid processes; its natural history suggests that it is a pathological entity. In a previous paper GARLAND and THOMSON have arrayed a good many facts which point to tuberculosis as the cause; in three of the four fatal cases death was due to generalised tuberculosis; biopsy of the parotid glands has, they claim, always provided histological evidence of tuberculosis of the fibrosing endothelioid type; and injection of biopsy material in one case produced fatal tuberculosis in a guinea-pig. Collateral evidence of tuberculosis is even commoner; a tuberculous family history, pleural effusion, radiological evidence of phthisis, cervical adenitis, and cutaneous tuberculides figure frequently in case reports. A scrutiny of the recorded cases suggests that if evidence of tuberculosis is carefully sought it is usually to be found, and further that many of those reported have not been investigated with enough completeness to exclude it. This criticism is applicable to Dr. TAIT's case—though he thinks it unlikely that his patient's polyneuritis could be tuberculous—while in the reports from Dr. REES, Dr. LLOYD DAVIES, and Drs. GARLAND and THOMSON all the cases have features suggestive of tuberculous infection.

Those who prefer to postulate an unknown infective agent hold that the evidence of tuberculosis is insufficient and point out that Koch's bacillus has not been demonstrated. It is true

that this has not been done, but it is notoriously difficult in the endothelial type of the disease. TAIT declares that in his patient the ocular lesions were not typical of tuberculous uveitis, but several biopsies of the iris have given positive evidence of this infection. The more fully investigated cases are published the greater becomes the weight of evidence in favour of a tuberculous ætiology, and it looks as though GARLAND and THOMSON would be justified in their decision to call it uveo-parotid tuberculosis. It is well to bear in mind, however, that the histological picture is one on which few pathologists will dogmatise, and that Koch's bacillus was once blamed for the reticulo-endothelial proliferation of Hodgkin's disease.

A PHILOSOPHY OF LIFE

THE common man who seeks to direct his life by what he thinks to be reason will gradually make a mess of it; his processes of thought may be correct enough but, as he fails to realise, his premises are inadequate or actually faulty. What we commonly call good conduct is the product of instinct and sentiment—instinct is fundamental, sentiment is social adaptation—and it would be beside the point for the moment to discuss where instinct comes from; we can be satisfied with the observed fact that it seldom points the wrong road. In the widespread interest in philosophy and psychology which has prevailed in the last 20 years there has been both gain and loss. Not a few persons, mostly young, have spent so much time puzzling over why they did things that they have had no time left to get anything done, and for most people introspection of the mind is about as healthy a proceeding as introspection of the bowels or stomach. But when it comes to directing other people's lives some knowledge of the viscera is certainly useful, and so it is with the mind. And the mind is a subject about which medical men usually know a good deal less than they do about the chest and belly; it would be well for them to know more, not so much for their personal use as for the guidance of those in trouble who come to see them. We welcome therefore the announcement which will be found in our advertisement columns that the British Institute of Philosophy has arranged a course of four lectures for medical men on the importance of a philosophy of life for mental health. Prof. W. LANGDON BROWN will speak on the biology of social life, Dr. WILLIAM BROWN on health, self-determination, and free will, Dr. EMANUEL MILLER on curative activity and mental health, and Dr. H. CRICHTON-MILLER on belief and adaptation. The lectures will be given at University Hall, Gordon-square, on the first four Thursdays in November at 5 P.M. The lecturers are distinguished and the subjects attractive.

ANNOTATIONS

SAFETY IN RADIOLOGY

THE danger of over-exposure to X rays and radium can be avoided by the provision of efficient protection and suitable working conditions. This is the opening sentence of the preliminary report of a committee set up in 1921 under the chairmanship of Sir Humphry Rolleston. If avoidable, why not avoided? The British X Ray and Radium Protection Committee has done much to codify the knowledge that we have and to see that this knowledge is applied. But no one could affirm that the need for its activity is gone by; in fact, as radiology develops it brings in its train new dangers which will require constant watchfulness to meet. Since July, 1921, when its first recommendations were issued, three further reports have appeared: in December, 1923, May, 1927, and again in June, 1934. This last report [1] which is now before us contains new material, in particular (Sect. VI.) a number of recommendations for the storage of X ray films. In view of the terrible disaster at the Cleveland Clinic Hospital in 1929 it is natural for the first recommendation to be that non-inflammable films should be used whenever possible. Another section (IX.) of the report considers the dangers which arise in connexion with the various types of high and low voltage machines with which treatment and diagnosis are being carried out, and may be regarded as supplementary to the Ministry of Health's publication (memo. 161 Med.) on "Precautions against Shock from Electromedical Apparatus." Periodical inspection of all such apparatus is essential, with particular attention to proper earthing. Sect. V. also deals with the precautions which are necessary in rooms devoted to X ray work. Increasing voltage—and voltage seems always to be on the up-grade—has defeated all efforts to make X ray equipment "shock-proof," and even when the high tension circuit is completely enclosed in earthed conductors it is still necessary to forbid any indiscriminate handling of these protected tubes during operation. Workers who are under the impression that no shock is possible from such apparatus may get a nasty, or even a dangerous, shock from the current passing through the dielectric to the earth connexion should the earthing system be defective.

With regard to those thinking of taking up radiology the committee recommends that no person should be employed as an X ray or radium worker unless his general health is good and his blood has been submitted to a complete investigation. His total leucocyte count should reach 6000 per c.mm. and his lymphocytes 1200 per c.mm. in at least one of three afternoon counts. A decided and sustained drop in either of these counts, which should be repeated every three months for radium workers and at longer intervals for X ray workers, must be the signal for a holiday, suitable treatment, and a review of the conditions of work. The recommendation for a working day of not more than seven hours, a working week of not more than five days, and four weeks' holiday every year is one which merits the serious attention of those responsible for the organisation of X ray and radium clinics. The report, which covers ten closely printed pages, should be studied with care by every radiologist and radiographer. Its main provisions have more than national importance, for they formed the basis of the international recommendations adopted at Stockholm in 1928.

[1] Copies may be had on application to the hon. secretaries of the Protection Committee, 32, Welbeck-street, W.1, or to the director, National Physical Laboratory, Teddington, Middlesex.

IMPENDING POPULATION CHANGES

THE changes which are impending in the constitution of our population may be foretold, by those who study them closely, with much the same prescience as can be applied to the behaviour of a river. Floods in the upper reaches will be followed, within a measurable period, by high levels in the lower. Information from different points in its course can enable the expert to foretell what the river will do at such and such a place within such and such a time. Thus the knowledge that heavy rains at the source have been followed by a dry period may justify the control of a dam lower down, in anticipation of a rise in the level round about a certain date, followed by a fall. Corresponding variations can be predicted in the population of a country, which is at a given moment of time, like the present, actually increasing, but will diminish within a calculable period. The constitution of our population at present is unusual. A steady fall in the birth-rate during the last 60 years, together with the prolongation of the span of average life, results in the existence of fewer young and more old people in the country than formerly. The old people will begin to die in increasing numbers in the near future. When this happens, the death-rate will rise above the birth-rate and the population will, apart from the effects of migration, begin to decline. These impending changes are vividly described by Miss Grace Leyborne in an article published in the *Sociological Review* of April, 1934. The population of England and Wales will be 40,213,500 in the year 1936, but in 1976, 40 years later, it will have fallen to 28,656,600. Attention is also drawn to impending changes in age-distribution. In 1931 children between the ages of 0 to 15 years contributed 24·2 per cent., and persons over 65, 6·2 per cent. of the population. In 1976 it is calculated that children of from 0 to 15 years will contribute 12·5 per cent., and persons over 65 17·5 per cent. of the population of these islands.

In recent years we have become so accustomed to the idea that this country is over-populated that some time is likely to elapse before the implications of these facts are properly grasped. A reorientation of opinion is, however, inevitable. It is indeed likely that, after the decline in our population has actually begun, the quarterly returns of births and deaths will be regarded by the press as one of the leading items of news, and may even be accorded the compliment of headlines in our daily papers. As the decline gains momentum, prominence will inevitably be given to proposals and schemes for combating it. Such measures as creches, children's camps, free medical and dental services for children, the provision of maternity leave for married wage-earning women, a modified system of education which eliminates competition for expensive schools, and even changes in the social attitude towards the illegitimate mother are discussed in a recent book by Enid Charles, Ph.D., reviewed on another page. She concludes that in the present organisation of society these innovations would receive little support. In her view it is to Russia that we will have to look for guidance in the period of the twilight of parenthood. In fact, the diminution of our population can be foreseen with more certainty than the measures which we are likely to take to combat it. The British have a proverbial capacity for appreciating realities and adapting themselves to them when forced to do so. Once the implications of the present trend in vital statistics are generally understood, it is at least possible that a solution may be found without this country finding it necessary to imitate the Russian social experiment.

GUM ACACIA INTRAVENOUSLY

FACILITIES for blood transfusion are now so ample that the practice of injecting solutions of gums no longer has a place in the treatment of traumatic anæmia and shock. Gum solutions, however, are still used pretty commonly, and apparently with at least temporary success, in combating the intractable œdema of certain types of nephritis. Since these solutions are intended to reinforce the colloidol osmotic pressure of the plasma, which has been reduced by depletion of protein, it is clearly desirable to know what osmotic pressure is exerted by the gum in the concentrations commonly employed. Prof. E. C. Dodds and Mr. R. T. M. Haines,[1] who have sought this information, find that the osmotic pressure of a 6 per cent. solution of gum acacia in normal saline —that is, in the concentration usually adopted by the clinician—is only a little more than a third of that of the plasma colloids. Even after sterilisation, which causes some increase, the pressure is still less than half that of the plasma. They also find that the colloidal osmotic pressure of gum acacia is greatly reduced by the presence of salt, and infer that the addition of salt to gum solutions is, partially at any rate, defeating the clinical object desired. It does not follow, however, that a salt-free solution would be free from drawbacks. If the body will tolerate the introduction into its veins of a substance so foreign to its normal composition as gum acacia—and the fact that it does so speaks volumes for its adaptability—it is by no means so complacent in its reception of salt-free water in any quantity; for significant reduction in the salt content of the body fluids is incompatible with life. It looks as though he who would employ gum solutions in the treatment of nephritis must choose between the devil of water intoxication and the deep sea of unrelieved œdema.

OCULAR REQUIREMENTS FOR AIR PILOTS

A THIRD edition of the brochure on the Medical Examination for Fitness for Flying[2] has just been published by the Air Ministry. No drastic changes have been made, but the requirements for the eye examination are of general interest. The visual acuity demanded for candidates for the Royal Air Force is 6/6 in each eye without glasses. The eye specialist, however, may, at his discretion, recommend acceptance when the visual acuity is equal to 6/9 (for short service commission 6/12) in each eye, provided that such vision is correctable by glasses to 6/6 in each eye. For private flying (A licence) and for navigators (B licence) correcting glasses are allowed to be worn, provided a degree of visual acuity can be attained equal at least to 80 per cent. of the normal for each eye or 90 per cent. for one eye and 70 per cent. for the other. Manifest hypermetropia of 2 dioptres, or over is a bar to acceptance, but nothing is said about myopia or astigmatism, and this is remarkable as a pilot who is entirely dependent on glasses for good vision might be materially handicapped by accident or weather. Normal colour vision and normal visual fields are necessary for flying, and with regard to the former it might be expected that a perimetric examina-

[1] Biochem. Jour., 1934, xxviii., 490.

[2] The price of the brochure is 9d. (postage extra), and it is obtainable at H.M. Stationery Office (London, Edinburgh, Manchester, Cardiff, or Belfast) or through any bookseller.

tion would be required in order to eliminate any such condition as incipient retinitis pigmentosa which may be compatible with full central visual acuity. The instructions state that the rough test by hand movements is, generally speaking, quite sufficient, but this we should be inclined to question, at any rate in default of a very careful ophthalmoscopic examination.

The major part of the section on eye examination is concerned with tests for ocular muscle balance and perfect binocular vision. "It has now been proved beyond argument that lack of true ocular muscle balance is the most common cause of error in judgment in bringing an aircraft to the landing ground." To exophorics the ground tends to look nearer than it really is, to esophorics further off. For either, and still more for hypophorics, more effort is required to maintain perfect binocular vision than for a pilot whose muscle balance is normal. Hence the great importance of the tests for perfect muscle balance and, it may be added, of the course of training which was instituted many years ago by Group-Captain E. C. Clements to obviate these defects. One of the tests most in favour at the Air Ministry is the Bishop Harman adjustable diaphragm, by means of which the field of vision of one eye can be either separated entirely or made partially coincident with that of the other. In the former position of the diaphragm—i.e., when the opening in it is at its narrowest—any defect of muscle balance is revealed and if there is none there is said to be perfect ocular poise. Short of this the width of the opening in the diaphragm necessary to mask any heterophoric defect provides a measure of the degree of the defect.

THE STUDY OF BEHAVIOUR

THE advancement of science has always been through the spear-head of physics, the new concepts of matter and energy which have followed from the mathematical reasoning on observation leading to a new orientation in natural philosophy. Nineteenth-century materialism has been largely abandoned in the realm of physics, and the importance of the mental contribution to our knowledge of the external world has introduced into science a psychological bias. This tendency has received tardy recognition in the biological sciences. Biology, physiology, and neurology have not freed themselves from the spectacular advance made in the middle of the last century, and materialistic explanations have been pressed without a realisation of the metaphysics upon which this materialism has been founded. The psychologists have been accused of vagueness and unscientific methods, because it is alleged that they have failed to explain behaviour on the basis of what is regarded as established physico-chemical laws. Neurology, satisfied with the concept of reflexes, has built up a coherent science, but coherent mainly because it has regarded behaviour as an additive product of a series of discrete events, founded upon stimulus and response.

In his presidential address to the section of zoology at the meeting of the British Association, Mr. E. S. Russell, D.Sc., regretted that biology and neurology to-day have rooted themselves in a dualism of mind and body, which ultimately ousts the mind and leaves the bodily mechanism in command of all behaviour situations. There is no warrant, he states, in experience and in the observation of animal behaviour, for such a sharp bifurcation of mind and body. In order to understand behaviour, we must free ourselves from this Cartesian philosophy. Prof. A. N. Whitehead, of Harvard, speaks of the seventeenth century as having produced a scheme of scientific thought framed by mathematicians for mathematicians, competent to frame abstractions based upon a concept of matter with its simple location in space and time, but leaving out of account mind as perceiving, suffering, and reasoning. When these abstractions came to be applied to concrete experience they were found not to fit in with the behaviour of living things. Cartesian philosophy has left us saddled with a theory of the organism as a machine; the instinctive behaviour of animals is squeezed into the mechanical mould of stimulus and response, whereas biological observation goes to prove that conditioned stimuli do not explain the search that organisms make in order to achieve adaptation. The internal needs or interests of an organism are as much determinants of behaviour as are the stimuli that impinge upon it from without. This is the kernel of Dr. Russell's address. Behaviour is not the result of additive processes, for, as Koffka and Köhler have shown, the organism picks out whole situations, and for the purpose of biological adjustments for the satisfaction of needs, always sees a "pattern upon a ground."

Behaviour is not drawn from an organism, but is, strictly speaking, directive. Slavish devotion to the method of a laboratory will always introduce mechanical categories, and mechanical explanations will logically follow. Fruitful biological study can only follow from work in the field where whole situations naturally appear, and where configurative perception follows in action. Perception, therefore, is not merely passive awareness, but an active interplay between the organism as a whole and a felt situation. This organismal standpoint will liberate not only biology but psychology from that pseudo-scientific discipline known as behaviourism. In future, Dr. Russell concludes, we shall not be bound to confine our attention to those facts which fit in with the spatiotemporal view of matter, but we shall accept all facts of experience and observation as our scientific province.

THE MERITS OF CYCLOPROPANE

SINCE the end of 1930, when R. M. Waters first tried it as an anæsthetic for human beings, cyclopropane has been in continuous use in America, though on a small scale. Its progress has been hindered by its expensiveness—an objection applying with special force in this country because all supplies have had to be imported. Now, however, by making the patient breathe the gas over and over again (carbon dioxide being removed) the cost of its administration has been brought within reasonable limits. Dr. Harold R. Griffith,[1] of Montreal, who has given it to 350 patients, finds that on the average under two gallons is required for each; and it is now produced at 50 cents a gallon. In less than 5 per cent. of the abdominal operations (numbering 206) was it necessary to give ether in addition to secure relaxation. In all respects, indeed, cyclopropane proved itself an excellent anæsthetic, and this agrees with Dr. Wesley Bourne's limited experience of it for childbirth, related in our issue of July 7th (pp. 20 and 36). The advantages claimed—namely, rapidity and pleasantness of induction, relaxation, and freedom from after-effects—have been evident on the comparatively few occasions when it has been given

[1] Canad. Med. Assoc. Jour., August, 1934, p. 157.

in this country, and it is to be hoped these occasions will soon be far more frequent, since the Anæsthetics Committee has now arranged to distribute some of the gas to selected hospitals.

THE MENU OF THE SPA

Dr. J. W. McNee spoke anxiously last May of the wild free life of the spa patient residing at a hotel. He would like to be sure, he said, that a patient with cirrhosis of the liver could not order champagne at his hotel in the middle of the morning and get it. His words, uttered during a visit of the British Health Resorts Association to Harrogate, were evidently an effective stimulus, for the Harrogate Corporation, Medical Society, and Hotels and Hydros Association have entered into a benign conspiracy to keep the patient in his place and guard him from temptation. Under the new system spa doctors will issue dietetic charts in duplicate to their patients; one will be handed over to the hotel management, the other the patient is allowed to keep. The hotel will see that he gets what is on the chart and nothing else, and no extra charge will be made for the special diet. Five types of diet are available, and one or other of these, it is claimed, can be modified to suit any ailment encountered among spa patients. They are: (*a*) a low calorie diet for the reduction of weight; (*b*) a restricted carbohydrate diet with a high vitamin content; (*c*) a restricted protein diet; (*d*) a lacto-vegetarian diet; and (*e*) a low fat diet. A similar service, it may be recalled, was performed last spring for visitors to Bath, when the local division of the British Medical Association, the Bath Corporation, and the Hotels Association agreed that each patient should receive from his doctor a diet card from which forbidden articles of food had been deleted. This he would hand to the head waiter of his hotel whose task it would be to keep him within his dietetic bounds. Here, again, no additional charge is made unless some specially expensive article of food is ordered. Both these systems have the advantages of treating each patient as an individual, and of avoiding unnecessary restrictions on diet which harass the temper. Undoubtedly this is a movement in the right direction, for the criticism has often been levelled at British spas that they compare unfavourably with foreign resorts in the attention paid to diet. Sir William Willcox referred to this criticism last May, during the course of a medical pilgrimage to the Scottish spas of Bridge of Allan and Strathpeffer. The patient whose salvation lies in the "detoxicating cure" which he advocated, will certainly require support to combine modified fasting with a suitable spa water. Any patient indeed who sets out to take the waters at a spa requires to do so under the guidance of experts. And when such experts as his spa doctor and his maître d'hôtel combine to cherish his digestive mechanism he may feel confident that he stands the best chance of profiting by a visit to a home health resort.

SURGERY OF THE HAND

THE September number of *Surgery, Gynecology, and Obstetrics* is dedicated to Prof. Allen B. Kanavel, of Chicago, and the papers in it are written by his colleagues and students. Kanavel was one of the five who brought this journal into being, and he has always been associated with it editorially. He is a surgeon of wide interests, but to English readers he is particularly known as the author of "Infections of the Hand"—a book which has done more than any other to put the surgery of the hand on a sound foundation. Two of the papers in the Festschrift are concerned with this difficult branch of surgical work. In the first, Sumner L. Koch reports 32 cases of acutely spreading infection of the hand following trivial injuries, with full case-histories. Cases of this kind are always very grave and the mortality is high, the deaths in this series including two doctors and two nurses. Koch, following Kanavel, firmly believes that early incision is extremely dangerous; the infection spreads by the lymphatics and incision can only open up further channels for absorption, without being able to attack the disease. In the treatment recommended large hot compresses are used, and also an electric cradle, rest in bed with forced administration of fluids being essential. Pus is evacuated only when definitely localised and healing is then rapid. Four types of cases are recognised: (1) those in which retrogression and recovery takes place without pus-formation; (2) those in which pus forms in the axillary glands after the local condition has settled; (3) those in which the inflammatory condition spreads up above the elbow, later retrogresses, and leads to local pus-formation; (4) those in which the process proceeds steadily and rapidly. From the rapidity of lymphatic absorption, Koch argues that primary cauterisation of the wound of entry can have no good effect.

Michael L. Mason describes 32 cases of chronic tenosynovitis, of which 23 were shown to be tuberculous. The volar aspect of the hand was involved in 80 per cent. of the cases, and in these the radial and ulnar bursæ seldom escaped. In the minority the digital sheaths were alone attacked. The remaining 20 per cent. were dorsal infections, and in these the sheaths of the extensor digitorum communis and of the extensor pollicis longus were always involved. In the early stages the sheath is only slightly thickened and contains clear fluid; later it is grossly thickened with granulation-tissue proliferation, caseation, rice-body formation, tendon invasion and destruction, with secondary infection and sinus formation. It seems that conservative treatment is never permanently successful, and operation is therefore required. The disease must be eradicated completely and this taxes the ingenuity of the surgeon, both in his method of approach and in the repair of the tendons that may have to be excised. Suitable methods of solving both problems are set out in Mason's article.

AUTOPATHOGRAPHY

AMONG the curiosities of medical literature are the accounts of the symptoms and course of diseases by doctors who have had bitter occasion to study them subjectively. Commenting on these in the Founder's lecture, delivered on Sept. 28th to the Chartered Society of Massage and Medical Gymnastics, Sir Humphry Rolleston cited descriptions by their victims of such diverse ills as angina pectoris, radio-dermatitis, and tuberculous warts due to direct infection. Every one of us could probably supply from his reading instances of classical accounts of disease processes which owe their graphic quality to personal experience. Among the common and non-fatal diseases our intimate knowledge of migraine, dyspepsia, and the psychoneuroses has been especially enriched by the critical notes of doctor patients; a record left by a medical acromegalic was recalled in our columns [1] on his death four years ago. In recent times the inconvenience of a sudden aphasia was the subject of a whimsical note contributed to *St. Bartholomew's Hospital Journal*, shortly before his death, by Sir Frederick Andrewes, which is a

[1] THE LANCET, 1930, ii., 651.

clinical document of real value. Sir Humphry touched only briefly on this fascinating subject of "autopathography" in his comprehensive review of the occupational diseases of those in attendance on the sick. He regards exposure to infection and worry as the main reasons why the mortality of the medical profession is slightly above the average of all occupied and retired males. The worry factor may account for the reputed high incidence of angina pectoris and duodenal ulcer in the profession. The infective factor might be expected to affect surgeons more than physicians; Sir Humphry quotes Prof. A. H. Burgess as having ascertained the death-rate of surgeons on the staff of the Manchester Royal Infirmary during the first quarter of the century to be nearly five times that of their medical colleagues. In the case of post-mortem infections there is some evidence that they occur more readily after a holiday, when immunity due to repeated small inoculations has worn off. The list of well-known bacteriologists who have succumbed to the infections they were investigating is startling in its length. The occupational diseases of radiologists are, it is hoped, for the most part a matter of history. Sir Humphry pointed out a noteworthy contrast between the clinical effect of X rays and of radium, in that though carcinoma is a well-known sequel of X ray exposure severe blood changes are rare; whereas in radium workers carcinoma is very rare and anæmia is more readily produced. Drug addiction is naturally a danger in those who have easy access to powerful narcotics and stimulants. Finally, Sir Humphry dealt with the possibility that the development in a doctor of a disease to which he has devoted much study is due to auto-suggestion rather than to coincidence. A third possibility is surely that speculation on the significance of symptoms which they have detected in themselves has unconsciously directed and maintained the interests of certain doctors in certain channels.

A SUGGESTED ALTERNATIVE TO PANEL PRACTICE

How might a State health service best be established? The report submitted by the Labour Party's national executive committee to the annual conference at Southport this week contains an outline of plans for bringing such a service into action. The compilers, for purposes of their report, assume that this development is desirable and they decide that, if it is, it should be based not on national health insurance (by extension to dependants, &c.), but on the health services of local authorities. "There are very grave deficiencies in the panel system," they say, "as regards both the type and standard of medical care provided and the existence of vested property interests in panels as such." They propose therefore that medical benefits should be taken away from health insurance altogether and that insured persons should in future receive cash benefits only, corresponding as far as possible to the rates of unemployment insurance at the time. The scope of the insurance scheme would be enlarged by including non-manual workers, with incomes up to say £500; but all these insured persons and their dependants would, like other people of similar means, look to their local authorities for medical service, both at home and in hospital. The local authorities would as far as possible take over the voluntary hospitals and other institutions by agreement. "The valuable services rendered by voluntary institutions are not unappreciated, but the provision of a fundamental service such as medical care should not be left to private charity." Their aim would be to provide something very much better than the benefits at present obtainable under national health insurance. The public health service should, it is felt, develop, especially in the towns, round a system of clinics. "These would be in effect well-equipped surgeries where the patient would receive the best examination, diagnosis and treatment—without the interminable periods of waiting so typical of the average hospital out-patients' department. This does not mean that the clinic should replace domiciliary medical attendance, but that it should be the centre round which such attendance and the other facilities of the Public Health Service should evolve." As soon as possible the panel, as such, might be transformed into non-saleable appointments in the public service—with abolition, of course, of insurance committees and the existing medical referee machinery. At the outset of the scheme most of the new domiciliary and institutional appointments would be apportioned among local doctors, mainly on a part-time basis, in a way roughly corresponding to the loss of panel and other patients the innovations would involve; but as these doctors went out of practice they would gradually be replaced by full-time workers. While the ultimate aim of a unified public medical service would be to provide free medical care for the population as a whole—in the same way as primary education is now provided free—people over the insurance income-limit could go on making their own arrangements for private treatment, being entitled to go to the public hospitals on payment of reasonable charges according to their means.

MEDICAL RESEARCH COUNCIL

Dr. A. J. Clark, M.C., F.R.S., professor of materia medica in the University of Edinburgh, and Dr. J. C. G. Ledingham, C.M.G., F.R.S., director of the Lister Institute of Preventive Medicine and professor of bacteriology in the University of London, have been appointed members of the Medical Research Council in succession to Sir Charles Sherrington, O.M., F.R.S., and Dr. A. J. Arkwright, F.R.S., who retired on Sept. 30th.

Two special lectures on the operative treatment of facial palsy will be delivered at the Royal College of Surgeons of England in Lincoln's Inn-fields, W.C., on Wednesday and Thursday, Oct. 10th and 11th at 5 P.M., by Dr. Arthur Baldwin Duel, senior surgeon-director of the Manhattan Eye, Ear, and Throat Hospital, New York. It will be recalled that a film illustrating Dr. Duel's methods was shown to the council of the College last April,[1] and some of his work has also been described by his collaborator, Sir Charles Ballance, to the sections of otology and laryngology of the Royal Society of Medicine.[2]

Summer Time, which commenced in Great Britain, Ireland, the Channel Islands, and the Isle of Man on Sunday, April 22nd, will cease on Sunday next, Oct. 7th, at 3 A.M., when the clock will be put back to 2 A.M. The hour 2–3 A.M. Summer time will thus be followed by the hour 2–3 A.M. Greenwich time.

Dame Janet Campbell has been invited by the Canadian Council on Child and Family Welfare, with the approval of the Dominion Government, to visit Canada, in the interests of maternal and child welfare, for October and November, and sails for Quebec to-day, Saturday.

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[1] THE LANCET, 1934, i., 859.
[2] Ibid., 1934, i., 1285.

PROGNOSIS

A Series of Signed Articles contributed by invitation

XXI.—THE PROGNOSIS IN SPONTANEOUS AND TRAUMATIC DETACHMENT OF THE RETINA

DETACHMENT of the retina may be the result of several different eye diseases: for example, it occurs as a concomitant of sarcoma of the choroid, in albuminuric retinitis (especially in pregnancy), as a complication of retinitis proliferans, and so on. It is, however, with so-called spontaneous or idiopathic detachment of the retina and that following direct or indirect injury to the eye that I shall deal here, and of the results of the forms of treatment that have been recently introduced.

Until a few years ago the prognosis of traumatic and spontaneous detachment of the retina was very grave; few cases of cure had been reported, and some at least of these were cases of detachment complicating albuminuric retinitis (especially that complicating pregnancy) in which the prognosis is fairly good. In these cases the retina tends to become re-attached to its bed, although pigmentary changes are seen in the retina as a result of which its function is permanently damaged.

In spontaneous and traumatic detachment of the retina many methods of treatment had been advocated and practised, but no single method was sufficiently effective to be adopted as a routine. So hopeless was the outlook that detachment of the retina was looked upon as being practically incurable, and a tradition of pessimism had become firmly established among ophthalmic surgeons. It had been noted that detachment of the retina in cases of albuminuric retinitis not infrequently became cured, whereas in cases in which a rent was discovered no good result followed any form of treatment. In view of this observation, it seems odd that no one had made any attempt to close such a defect. We now know that in most cases of detachment a hole can be found in the retina, and that if one hole is closed the presence of another hole elsewhere means a persistence of the detachment until the second hole also has been closed.

GONIN'S DEDUCTION

The insistence by Jules Gonin that a retinal hole is a condition of detachment, and his brilliant work showing that a detached retina may become replaced when the hole is closed, has completely revolutionised the treatment and outlook of this condition. Nowadays the chances of reposition of the retina are comparatively good, not only in the sense of preserving sight already present before operation, but also in the direction of the recovery of sight already lost. We are frequently asked by patients on whom we propose to operate for retinal detachment what the chance of success may be. It is still necessary to be very cautious in giving an estimate because two distinct problems are involved: (1) what chances there are of the retina becoming re-attached, and (2) what amount of useful central vision is likely to be recovered.

In an early communication by Gonin (1929), he stated that in 81 cases the retina had been re-attached in 53 per cent., and in 1932, in 221 cases, again 53 per cent. of the cases had the same result. Although by Gonin's method of operation other authors of papers had not obtained such good results, nevertheless the chance of the retina becoming re-attached varied between 25 per cent. and 53 per cent. Not all these results were exactly comparable, as some observers had operated upon almost any case of detachment of the retina that presented itself, whereas others carefully selected their cases and only operated upon those which promised a reasonable chance of success.

One very important factor is the duration of the detachment. For instance, the Moorfields figures showed that of the first 200 cases operated upon, when no very strict selection of cases was made, there were 40 per cent. of successes among cases of six weeks' duration, 28 per cent. among those of six weeks' to three months' duration, 22 per cent. of those of three to six months' duration, falling to 10 per cent. among cases that were of more than six months' duration. Again, of the successes obtained 65 per cent. resulted from one operation, 28 per cent. from two, 5 per cent. from three, and roughly 2 per cent. from four operations. It will, therefore, be seen what an important factor the duration of the detachment has upon the chance of replacing the retina. Various accidents also occurred which militated against good results, such as the formation of secondary holes, vitreous hæmorrhages, uveitis, and thrombosis of a vortex vein. In spite of this the results of treatment were satisfactory in 29 per cent. of cases.

Gonin's operation of ignipuncture was followed later by the Guist operation of multiple trephinings of the sclera with the use of caustic potash to the exposed choroid, as a result of which a much bigger defect in the retina might be attacked at one operation. The procedure was extremely tedious both for patient and operator, but the Moorfields figures showed 50 per cent. of successes although the complications mentioned above occurred in about the same proportion of cases.

THE LARSSON OPERATION

In August, 1932, the Guist operation was abandoned at Moorfields for the Larsson operation. The principle of this operation is essentially the same as that of Guist in that multiple areas of choroiditis are produced so as to include the retinal defect, but the effect is produced upon the intact sclera by means of diathermy. A very small active electrode is placed upon the sclera in an appropriate place, and by passing a current of 60 ma. for about eight seconds a patch of choroiditis is produced immediately underneath. This procedure is repeated sufficiently often in the neighbourhood, the retinal defect is segregated, and upon puncturing the sclera and choroid the subretinal fluid escapes, and the retina then comes into contact with the choroid. The results of this operation have been very much better than those obtained by other means, and 76 per cent. of successes in replacement of the retina have followed with a diminution of post-operative complications.

It must be remembered that though these statistics are of great importance in allowing us to set a value upon various means of treatment, we must be very careful in their use when giving patients an opinion of their chances of success after operation. Each case must be considered individually.

When we were depending upon ignipuncture, cases with small holes or tears gave by far the best prognosis, whereas cases with large tears and disinsertions gave a much worse prognosis because the operation had to be repeated on several occasions owing to the size of the defect. Since the introduction of diathermy cases of *disinsertion* give a good prognosis, as frequently the retinal tissue involved is relatively healthy and the defect is easily accessible being so near the periphery.

Cases with *large or multiple rents* give a bad prognosis, not only because it is difficult to close

such large defects, but also because we are dealing with degenerated and unhealthy tissue.

INVOLVEMENT OF THE MACULA

Apart from chances of replacing the retina by operation there is another point in prognosis, particularly from the patient's point of view. It is satisfactory to the surgeon when he succeeds in replacing the retina, but patients judge the success not only by the increased field of vision provided by the operation but also upon the central vision that results. This introduces quite another point in prognosis.

Unfortunately a very high proportion of retinal defects occur upon the temporal side, and there needs to be only quite a small detachment of the retina to involve the macula. Once the macula has become detached it can hardly be expected that good central vision will be regained. There is, however, a tendency to improvement of central vision as time goes on, partly due to clearing of the vitreous and partly apparently to some recovery of the macula. Cases occur in which a vision of 6/24 a few weeks after the operation has improved to 6/12 during the course of a year, and even better results have followed in exceptional cases. In any event a patient may be promised an increase in the field of vision in a case of replacement of the retina, and the probability that the central vision present at the time of operation will be retained and that some improvement will be noticed when the macula has been involved in the detachment.

RARE TYPES OF DETACHMENT

A more positive opinion may be expressed with reference to three unusual types of detachment of the retina.

Occasionally one sees a patient very soon after a direct or indirect injury to the eye, or in whom certain phenomena, such as flashes or the sudden onset of vitreous opacities, have drawn attention to the eye. Such patients have a recent tear of the retina with only a very small and localised detachment, perhaps confined to the operculum of the horse-shoe-shaped tear usually found. If a patient with this lesion is immediately submitted to a diathermy operation over the site of the tear, even without a subsequent scleral puncture, an excellent result will follow.

Another type of case to which attention has recently been drawn is that in which there is a small globular detachment near the periphery; the retina has a peculiar fenestrated appearance, and no defect can be found. The detachment is sharply localised and is probably of the nature of a cyst. Such detachments seem to be of slow progress and may be multiple. If a diathermy operation is performed on the sclera overlying the cyst, and the cyst is then evacuated, progress seems to be uniformly good.

Finally there are cases of detachment of the retina following operation for extraction of cataract, and these may be divided into two groups—those following extraction of senile cataract, and those following a needling operation for soft cataract.

The outlook following operation in these cases is very poor, and this is not surprising when one considers the fact that the eyes have already before detachment undergone a more or less serious operation. Moreover there are great technical difficulties due to the altered refraction of the eye and to what is usually a small opening in an otherwise opaque capsule through which observations have to be made to find and locate any defect in the retina. In cases of detachment following extraction of cataract the outlook is a little better, and in about 10 per cent. the retina has been replaced; but in detachment following an operation on soft cataract no success has to my knowledge been recorded.

CONCLUSION

It does not seem likely that we shall achieve a much higher percentage of successes in the direction of replacement of the retina (the percentage of success is already surprisingly good), but we may hope for a better result in the direction of preserving central vision: this will depend almost entirely upon the early recognition of defects in the retina, so that an operation may be performed before the retina has become extensively detached, and more especially before the macula has become involved.

I wish to record my great indebtedness to Mr. C. D. Shapland, whose papers, incorporating the Moorfields results, have been the source of much of this article. They are to be found in the transactions of the Ophthalmological Society for 1932, 1933, and 1934 and the *British Journal of Ophthalmology*, 1934.

CHARLES GOULDEN, O.B.E., M.D., M.Chir., F.R.C.S.,
Ophthalmic Surgeon to the London Hospital; Surgeon to Moorfields Eye Hospital.

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE.

Surg. Capts. C. V. Griffiths, D.S.O., to *Boscawen* for Portland Hospital; and H. F. Briggs to *Africander* for Cape of Good Hope Hospital. Capt. Griffiths has held the chair of medicine at Haslar and deputised for the medical director-general of the Navy.

Surg. Lt.-Comdrs. G. A. Miller and C. H. Birt to *President* for course.

Surg. Lt. B. S. Lewis to *Victory* for R.N.B.

ROYAL NAVAL VOLUNTEER RESERVE

Surg. Lt. G. J. Murray to *Effingham*.

Proby. Surg. Sub-Lt. W. S. Miller to be Surg. Sub-Lt.

ARMY MEDICAL SERVICES

Col. J. Heatly-Spencer, from Asst. Professor of Tropical Medicine, to be Professor of Tropical Medicine, Royal Army Medical College, and Consulting Physician to the Army.

ROYAL ARMY MEDICAL CORPS

Lt. C. B. R. Pollock to be Capt.

ARMY DENTAL CORPS

Capt. N. F. Smith to be Maj.

Lt. W. A. O. Roe to be Capt.

TERRITORIAL ARMY

Capts. N. F. C. Burgess, J. C. Adam, and C. A. Cowie to be Majs.

Lt. T. T. S. Hall to be Capt.

Capt. R. Anderton resigns his commn.

TERRITORIAL ARMY RESERVE OF OFFICERS

Maj. C. H. Welch, having attained the age limit, retires and retains his rank, with permission to wear the prescribed uniform.

ROYAL AIR FORCE

Flying Offr. G. Gilchrist is promoted to the rank of Flight Lt.

Flight Lt. (Hon. Wing Comdr.) J. Valerie, O.B.E., relinquishes his temporary commission on completion of service and is permitted to retain the honorary rank of Wing Comdr.

Flight Lts. P. J. McNally to Aeroplane and Armament Exper. Estab., Martlesham Heath; J. C. Neely to Central Medical Estab.

INDIAN MEDICAL SERVICE

Majs. to be Lt.-Cols.: P. Savage, Jamal-ud-din, H. G. Alexander, P. D. Chopra, and A. S. Fry.

OPENING OF THE MEDICAL SCHOOLS

In several of the London medical schools the winter session opened last Monday with inaugural addresses to the students. Below we publish extracts from them. Sir John Simon spoke at Westminster, Dr. MacCormac at Middlesex, Prof. Langdon Brown at St. George's, Dr. MacKeith at the Royal Free, and Sir John Rose Bradford at University College Hospital.

CULTURE AND SPECIALISATION

By Sir JOHN SIMON, G.C.S.I.

H.M. SECRETARY OF STATE FOR FOREIGN AFFAIRS

An important practical problem confronting many young men entering upon a professional career in modern conditions is how to avoid losing contact with, and interest in, that wider range of subjects, especially those associated with taste, judgment, beauty, and truth which were called literature, music, art, and the more philosophical aspects of life. They are in doubt how to select which, among this range, will make a secondary enthusiasm, and enable the young man to live a life which is not only kept in touch with patients and hospital wards, or law-courts and wigs and gowns, but also with the spirit of man and the splendour of his life, with some at least of the artistic and literary achievements which make the warp and woof of the fabric of human civilisation.

Let us consider this problem together. I am not, of course, referring to the long list of famous men who started their training or even their professional career as medical students or doctors, but who ultimately found their niche in fame elsewhere. At the Bar many are called but few are chosen, and there is a constant movement away from the practice of that profession into other fields. The same thing is true of medicine. I like to think of some of the famous names, of which your splendid profession may be especially proud, of men who began in the practice of medicine. You have a very strong line in poets. John Keats was a student of St. Thomas's and of Guy's, and in due course became a qualified surgeon. Oliver Goldsmith was a rather more doubtful case; no one is quite sure whether he actually became a qualified doctor with a degree, but the general belief is that he accelerated his own death by presuming to prescribe for himself with undue freedom and frequency the antimonial preparation known as Dr. James's powder. You have a splendid modern name among the poets, of a man who practised in very high positions the profession of medicine for a large part of his working life before he gave up medicine and devoted himself to poetry, ending by being the Poet Laureate. Robert Bridges was Assistant Physician at the Children's Hospital and Physician at the Great Northern Hospital. He practised here in London a large part of his working life, but he preserved his vigour in age so well that it was not until his 85th birthday that he published the most splendid and beautiful of all his poems, The Testament of Beauty.

The most curious case in medicine is that of Thomas Dover, the original inventor of Dover's powder. He sailed from Bristol as second in command of a privateer in company with William Dampier, buccaneer, pirate, circumnavigator, captain in the Navy, and hydrographer. It was Dr. Dover who discovered on his voyage the original Robinson Crusoe. Thereafter he resumed practice and became famous as the "quicksilver doctor," owing to his addiction to prescribing metallic mercury. The list of famous men whose training and profession included medicine, but whose names are remembered for other achievements is endless, and includes Schiller, Scaliger, Rabelais, Marat, and Guillotine.

Many other such cases might be mentioned, but I am not thinking of those whose origins were in medicine and who afterwards gathered asphodel in other fields. I am rather thinking of those who have pursued the medical profession throughout their lives and yet have maintained and cultivated some secondary pursuit of culture, and have thus always had active contact with the widest range of beautiful thoughts and things. If I were merely to rely on my own memory of friends, I should place very high in that list the honoured name of Sir Norman Moore. I used to belong to a very interesting dining-club with Dr. Norman Moore, of Bart.'s; I have never in my life enjoyed a pleasant, graceful flow of wit, allusion, and information more thoroughly than in his company.

Here, therefore, is the problem: how are we all, in the busy lives which we are preparing, going to keep fresh some other interest of a literary or artistic kind, beside the main object and duty of our daily round—what the Greeks would have called a παρεργον: a second task which lies at the side of the main task, a subordinate task. The French sometimes refer to it as violon d'Ingres, because the French painter Ingres was also a great violinist, and they mean that he had a second string to his bow. How are we going to set about constructing this very necessary framework for life? Such a man in the history of your profession was the great Edward Jenner, who, besides discovering vaccination, worked at ornithology, was a considerable authority on fossils, and wrote poetry. I like to think that the inventor of vaccination wrote a poem called Address to a Robin. You may possibly know that the Empress of Russia of the day directed that the first Russian child who was vaccinated should ever afterwards be called Vaccinof—and he was! Ordinary men, however, cannot of course hope to double and treble the parts over a wide range of science and art, as has been done in the past by wonderful people like Leonardo da Vinci, or by the painter-poets. Francis Bacon, I suppose, was the last man who knew everything there then was to know, and it seems too much to believe that he was Shakespeare as well. Medical students who mean to keep wide contacts should realise in advance the difficulties. Otherwise they will find that they will be unlike the "wise thrush" in Browning's poem, and that they will never be able to "recapture that first fine, careless rapture."

May I suggest two or three practical steps? In the first place, realise that you cannot be an Admirable Crichton. You cannot be a complete walking dictionary and encyclopædia of every artistic, literary, and scientific subject on earth. Even the encyclopædias are written by several people; I believe that even the medical encyclopædias are a composite production. Make up your mind, then; find out as soon as you can which are some of the lines which it would be just as well not to pursue. Charles Lamb, in one of his essays, says, "I have no ear," and goes on to say that he does not by that phrase wish it to be understood that he is deprived of these useful appendages, but that once, when he was

strumming on the piano, his friend came in and said, "I thought it could not be the maid." I believe that people who really and truly enjoy music will be able to maintain that tremendous pleasure throughout life better almost than any other pleasure can be maintained—a constant heightening of exhilaration and delight. It is my misfortune that, though I tolerate music, I do not really understand it. I would strongly urge the busy practitioners of Harley-street of the future not to accept the invitations of fashionable ladies to their musical evenings to hear the best violinist in town if they do not like music! If they do like it, then they should accept any invitation they can get.

In the second place, you must lay the foundations quite firmly now, and resolve to maintain them through these difficult years when nothing seems to exist on the horizon but the forthcoming examination, and when that becomes portentously bigger and portentously nearer with every passing hour. Did you ever read a delightful essay of the late Lord Grey, On the Pleasures of Reading? It included, I remember, a story of the former Mr. Auberon Herbert, a most hospitable and cultivated gentleman, who asked a number of friends down for the week-end to his country place. When they arrived on the Saturday, he came to the hall and greeted them as a good host does, and then asked, "Now, what are you going to do? *We* are reading." He was an admirable host, possessing the first qualification for that office: he left his friends to decide for themselves. If you have a taste for serious reading, whatever it is—the classics, poetry, history—a great deal is to be done by keeping it up, even though it be by little every week. My own line, modest as it is, is to read the classics. When I say "the classics" I mean the Loeb Classics; that is to say, the books which have the Latin or the Greek on one side and a very good English translation on the other! It is a real consolation; it is astounding how comforting it is, if you have had a thoroughly bad day, to return to these ancient founts and to reflect that the people who wrote, read, and lived in those days had similar worries which are not on record, and that it is quite possible that in another 30 years' time you will have forgotten about it all yourself.

Another consideration which is perhaps particularly appropriate for those studying medicine is that in the nature of things the modern doctor is bound to have a certain acquaintance with some modern languages. I believe that without any great effort it is possible enormously to add to the pleasure of a busy life if you make yourself reasonably familiar—if possible, facile—in some spoken foreign tongue. My own experience is that it is all nonsense to say that Englishmen cannot speak foreign languages. There are many races and nations in Europe who are lamentably backward in that respect, but on the whole the cultivated Englishman or Englishwoman is not one of them. A third thing that I would suggest is the practice of learning by heart. Naturally, this is in the nature of an autobiographical confession, and I stand before you, perhaps, rather as a warning than an example. A great many people believe that you cannot learn by heart after you have passed a certain age. Of course, I do not know what the psychologists of the Westminster Hospital school may say about it; all I can say is that you can. If you have to go on a sea-voyage there are few better things to do than to determine that you will learn a certain number of things by heart. I make a practice of it; I bore my relations and friends for the rest of my life by quotations, and when I look at the book I find that I have quoted them wrong!

I would put down a fourth thing. I do not myself much believe in people of the same profession talking shop to one another at meals. In this respect the law is very honourably distinguished: no lawyers ever talk shop to one another at meals. On the other hand, there is nothing more interesting than hearing other people talk their shop, and I am content to sit and listen, and occasionally provoke by an ignorant and impertinent demand, to the end of time if only I can get someone who knows his own subject well to talk about it. It greatly increases the pleasure of social contact.

Forgive me if in conclusion I mention one other compartment which I hope will not be overlooked. Gentlemen of the Westminster Hospital school, do not enter upon your coming career and put on one side as impossible, or unworthy of attention, or uninteresting, or degrading, a decent interest in public affairs. The future of our own country does not depend upon the performance of a limited list of politicians; it depends upon the discharge of their responsibility by the people of this land, led, as they are always willing to be led, by friends who meet them in contact and in service. I should like to think that the country doctor on his rounds, that the great man in the medical quarter of London, that the specialist occasionally called in at a critical hour, do not forget that they who are serving and the patient who is being served are both citizens of a great community responsible for its public life. The happiness and future of each depend upon nothing more than that it should be the religion of every honest man to help to see that his country is well governed.

The times are very useful for getting this wider range of sympathies. The old fierce oppositions between different kinds of knowledge and learning are going, just like much of the old opposition between religion and science. You will remember the quatrain:

> "How seldom it happens, if ever,
> That people behave as they should;
> The good are so *harsh* to the clever,
> The clever so *rude* to the good."

Forty years ago the classical authorities of a great English university described science as "stinks." The literary scholar thought, and very strongly hinted, that the student of science was materialistic. The man of science thought the professors of humaner learning and letters were vague—and indeed they sometimes were. A most curious thing which is happening, as I understand it, is that philosophy and mathematics are coming closer together in this age than they have been at any time since Plato. I read the Republic of Plato 40 or 50 years ago, and others of Plato's dialogues, and came across these mysterious passages which show quite clearly that this old Greek painter thought somehow that the mathematics he knew and the philosophy he was studying were integrally related. Read Sir James Jeans's last address to the British Association, and see if Plato's ideas are not coming true. Plato, of course, was not always right. In his ideal republic he had a particular method for choosing the doctors. Socrates proved by irrefragable reasoning that nobody could cure a disease who had not had it, and consequently that the sick persons ought to be the doctors, and the greater the range of your disease the better doctor you were. It seemed to follow that there was no medical aid for a fatal complaint.

We have, therefore, these prospects of improvement. On the other hand, this thrust and rush of

life is something that has never been known in the world before. You remember, I daresay, Matthew Arnold's lines in The Scholar Gipsy, when he speaks of the days which he regarded as already past :

" When life ran gaily as the sparkling Thames :
Before this strange disease of modern life
With its sick hurry, its divided aims,
Its o'ertax'd heads, its palsied hearts, was rife."

But Matthew Arnold lived in a peaceful, slow-moving age, and had not the faintest conception of what was coming upon the generations to succeed him.

That is my appeal to the students of this medical school. Pursue with unrelenting vigour and determination the professional course upon which you are set. No man has ever achieved either usefulness or success in a really great profession who has not brought those qualities to the task. But remember that you, too, are entering into a great inheritance, and it is for you to hand on that inheritance in all its width and splendour.

In one of his books—I think it is " The Autocrat at the Breakfast Table "—Oliver Wendell Holmes wrote a poem about the chambered nautilus, the point of which was that, as the creature living in its shell grows, it adds a new and bigger chamber to its shell. The last verse of that poem gives me my conclusion :—

" Build thee more stately mansions, O my soul,
As the swift seasons roll.
Leave thy low-vaulted past :
Let each new temple, nobler than the last,
Shut thee from heaven with a dome more vast
Till thou at length art free,
Leaving thine outgrown shell by life's unrestful sea."

OUR PROFESSION

By Henry MacCormac, C.B.E., F.R.C.P.
PHYSICIAN FOR DISEASES OF THE SKIN, MIDDLESEX HOSPITAL, LONDON

Since 1886 when the Medical Act was established by law, all those who practise medicine have been united into a single body with equal and similar rights. This was not always the case. Formerly there existed three separate estates—physicians, surgeons, and apothecaries—each with clearly defined functions and carefully guarded privileges outside which none might trespass.

To appreciate the existing relationship, it is necessary to recall that while in ancient times medicine and surgery were united, in the feudal period the physician was an ecclesiastic forbidden by canon law to shed blood, subscribing to the feudal notion in monkish and scholastic minds that anything that savoured of handicraft was menial and by so much degrading (N. G. Horner). The surgeons, on the other hand, were mostly unlettered craftsmen following a subordinate office, and were often deficient both in learning and scholarship. With few exceptions surgical apprentices were drawn from the humblest ranks. Thomas Gale writing in the sixteenth century, in " An Institution of a Chirurgion," says that " Few that have wel brought up their sonne will put him to the arte, bicause it is accounted so beggarly and vile."

The third estate, the apothecaries, were merely compounders and vendors of drugs at one time associated with the grocers with whom they shared the drug trade. Their wares and shops were subject to inspection by officials of the College of Physicians and they were expected to maintain a certain standard and submit to certain defined regulations as shown by the rules laid down by William Bulleyn for the guidance of apothecaries in the sixteenth century. In these rules the apothecary is told to meddle only in his vocation and to bear in mind that he is only the physician's cook. He is, however, allowed to open well a vein for to help pleurisy, and is instructed to have two places in his shop, one the most clean for physic, and a baser place for the chirurgic stuff.

To-day our profession is governed by the General Medical Council, a statutory body whose duty it is to protect the public by maintaining a standard of professional conduct and competence. This tradition of service is not a new one : it was already established in the reign of Henry VIII., when in 1518, by charter, the King incorporated the College of Physicians, giving them authority to examine and license every person proposing to practise physic in London and seven miles beyond. The authority vested in the College was comprehensive. The Censors Board constituted a tribunal which was empowered to try, fine, and even imprison any who attempted to evade the regulations, and the Physicians were not reluctant to exercise their rights. This was not mere professional prejudice. A central authority of this sort, in a sense the forerunner of the General Medical Council of to-day, was very necessary, as we may learn from the reports of the proceedings of the College against irregular practitioners from which the following is taken.

One Simon, an astrologer, was brought before the College and charged. He boasted that he made use of no other help for the discovery of distempers but his astronomical almanacs, and that by the heavenly signs, aspects, and constellations of the planets, he could presently know every disease. Being examined in the elements of astronomy as well as the elements of physic, he answered so absurdly and ridiculously that it caused great mirth and sport among the auditors. He was fined and imprisoned. This, however, did not end his career, for nine months later he again appeared confessing that he had prescribed a compound water to a gentleman in a burning fever, upon the taking of which the gentleman immediately died.

The Censors Board did not punish all who came before it. Some were approved and even specialists were admitted. We learn that John Luke in 1561 was granted a faculty to practise diseases of the eye, provided he limited his treatment to the use of external remedies. This would seem to be the earliest example in England of a diploma conferred upon an ophthalmic surgeon.

Following the charter of incorporation of 1518 two other Acts in the reign of Henry VIII. had given the physicians further privileges, and the contemporary surgeons now found it necessary to settle and regularise their position. Their aim was to raise their calling from that of a trade to a profession, to limit the practice of quacks, and to improve the standard of surgical education. They first sought an alliance with the physicians, and when this failed they amalgamated in 1540 with the Barbers Company, a union which lasted for over 200 years. This association was mainly one of convenience. " From first to last," Sir James Paget has written, " and even during their temporary conjunction with the Barbers Company, real surgeons held themselves apart as a distinct body. There was no fusion of the two callings." The Act by which the Barbers and Surgeons were united provided what the surgeons should and should not do, and limited the operations of the barbers to certain forms of minor surgery such as blood-letting. The apparatus symbolical of this is to be seen to-day outside many barbers' shops ; the pole to be grasped by the patient, the red stripe representing blood, and the brass dish into which the measured quantity of blood was received.

The surgeons' training as regulated by the Guild depended upon a system of apprenticeship. The

apprentice was usually about 14 years old, and the term of servitude lasted seven years. This introduction to surgery by apprenticeship prevailed until recent times, and we know that apprentices who were bound to hospital surgeons such as Hunter and Abernethy paid for this privilege fees varying from £500 to £1000. The Barber-Surgeons were a progressive body. Aware of the importance of a knowledge of anatomy for their craft, they took immediate steps to provide a series of lectures for which they were granted annually the bodies of four criminals executed at Tyburn. Each anatomy lasted three days, and the lectures were open to the public. At their conclusion a feast was given to which the more distinguished visitors were invited. Samuel Pepys who was present on one occasion describes the procedure as follows:—

"About eleven o'clock Commissioner Pet and I walked to the Chyrurgeons Hall . . . where we were led into the theatre: and by and by comes the reader Dr. Tearne with the Master and Company in a very handsome manner. . . . His discourse being finished we had a fine dinner, many Doctors of Physic, and we used with extraordinary respect."

No surgeon could practise in London or within a radius of seven miles without a licence which was granted after examination. Rejections were not infrequent, and when the candidate was unusually ignorant the coroner was invited to hear the examination. The Surgeons also instituted a system of consultation by which cases of difficulty were referred to a special committee. Failure to observe this rule was severely punished.

One case reported in 1635 has an historic interest. Wm. Kellet was censured for failing to present Mr. Kinnersley's maid who died in his charge. In his defence he stated that Mr. Doctor Harvey, being called to the patient, said there was no fracture, that the tumour on the temporal muscle could be dispersed, and that the vomiting came from a foulness of the stomach. The marginal note summarises the full proceedings in four words, not very complimentary to the discoverer of the circulation of the blood: "Dr. Harvey's ill-practice."

The eighteenth century was marked by two events which were to have a profound effect on the future of medicine; the beginning of our system of voluntary hospitals and the dissolution of the Barbers-Surgeons Company. The severance of the Barbers from the Surgeons took place in 1745, but it was not until 1800 that the Royal College of Surgeons was established. The surgeons, largely through their own fault, allowed the apothecaries to gain the greater share in the control and education of the bulk of the profession. The status of the apothecaries had been entirely changed after the Great Plague of London in 1665 when the medical care of the sick poor fell into their hands. They had established themselves as a humbler branch of general practitioner, and in 1815 consolidated their position by the Apothecaries Act which secured among other things a minimum qualification in medicine. Following the collapse of the Barber-Surgeons there grew up private schools of anatomy, of which the Windmill-street School was the most celebrated. It possesses a special interest for us, because out of it the medical school of the Middlesex Hospital developed.

A good deal was expected of the medical student. In the year 1830, as Sir D'Arcy Power has pointed out, the programme was as follows: Midwifery from 8 to 9, chemistry from 9.30 to 11 three days a week, and medicine at the same hour on the other days. Walking the hospital daily from 1 till 2. Anatomy from 2 to 4, with demonstrations at 11. Physiology from 6 to 7.30, followed by surgery until 9. Materia medica twice a week in the evening. Natural philosophy optional and a meeting of the Medical Society every Saturday evening also fortunately optional. This left about three or four hours daily for food, exercise, and recreation. There were, however, many who were less thoroughly trained, or indeed, were hardly trained at all, and unqualified practice by illiterate persons was rife throughout the country. There was no means of distinguishing between the genuine doctor and the imposter. This state of affairs called for reform, and in response to this need the Medical Act was passed. The circle is completed. Throughout 400 years, by a slow process of evolution, the three estates—physicians, surgeons, and apothecaries—originally distinct, have progressed and developed to be united into the single body of our profession.

WE HAVE REASON TO THINK

By W. Langdon Brown, F.R.C.P.
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Hunter's famous aphorism "Don't think, try" may often have been misinterpreted, but never more sardonically than by a friend of mine, who commented that out of respect to him the medical profession for more than a century had been trying not to think. And although we realise that Hunter was merely advocating experiment rather than speculation, there is a sting of truth in the comment. A hundred and fifty years ago the need for the collection of data was paramount; to-day there is at least an equal need for the data to be assimilated and coördinated by careful thinking.

If Socrates discoursing with Phaedro on the banks of the Ilissus could not define thought, neither can I be expected to do so. But I like Rodin's sculptured vision of "Le Penseur." At first sight that low-browed squatting figure, brooding with chin resting on knuckle, hardly seems to typify thought, until one realises that it represents the dawn of thought, the painful gestation of ideas in the caveman's mind. At what stage precisely do the twin streams of temperament arising from the internal afferent impulses and from perceptions of the outside world, ascending through chains of association cells enriched by experience, attain in the highest levels of the brain to the dignity of abstract thought?

You will, I hope, forgive me if I attempt a biological rather than a metaphysical approach to a problem I am not prepared to solve. For I do believe that this method has in comparatively few years carried us further towards a comprehension of the workings of man's mind than centuries of metaphysics have achieved. As Robert Bridges said "Man's Reason is in such deep insolvency to sense" that:

> "Not without alliance of the animal senses
> Hath she any miracle."

One may fairly say that one of the most recent achievements of man's reason is his recognition of how unreasonable a being he is. To quote the same poet:

> "How small a part of Universal Mind can conscient Reason claim!
> 'Tis to the unconscious mind as the habitable crust is to the mass of the earth."

But his narrow crust of reason has a great, and as Rodin saw, a painful task. It has to coördinate here and repress there these streams of afferent impulses which pouring through the basal ganglia have gained in turbulence and in turbidity by stirring emotional depths inherited from long-dead ancestors as well as those acquired in earlier life. It is no light task to provide for the precipitation of the mud, the

clarification of the streams and, to pursue the simile, usefully to employ them to irrigate the higher centres for the fertilisation of thought.

Perhaps, as Adler says, nothing is quite so conscious and nothing quite so unconscious as we imagine. Indeed, the frontier is an indefinite and changing one. But reason properly used will agree to recognise the place that the emotions should be accorded in life.

It is perhaps due to mental attitudes in the past which tended to exaggerate the rôle of reason that there has arisen an undoubted and undue depreciation of reason in these latter days. For whole nations politics have become total abandonment of the right of judgment into the hands of a dictator, while a religious movement of the day relegates the individual conscience to the guidance of a group. I do not intend to discuss either politics or religion. I merely wish to illustrate how widespread is the individual's lack of confidence to-day in his own power of reason. But perhaps the process can be best observed in certain literary movements which, starting with an angry reaction against the intellect, such as D. H. Lawrence, for instance, displayed, has gradually deteriorated into what appears to me to be mere baby talk. Whatever this may mean to the writer himself—or herself, I must add, since Gertrude Stein is one of the most notorious exponents of the "cocky-locky, henny-penny" style of writing which was formerly reserved for the delectation of the nursery—it can, from the nature of the case, communicate very little to anyone who does not possess the key.

That inspiration wells up from the unconscious, or at least the subconscious, would be generally admitted, but just as the highest level of the brain selects the sensory impressions to which it will pay attention, so reason must arrange and select the messages from the emotional levels. To-day only too often a writer fishes up from the unconscious what appears to him to be a pearl worthy to be treasured, but which seems to the onlooker nothing but a worthless pebble. Why are other people's dreams so utterly boring to everyone except a psycho-analyst? Because the narrator cannot reproduce the emotional effect which accompanied the dream. The artist, by judicious and intellectual arrangement of the material derived from this inspiration, may be able to convey the thrill, but the writers against whom I am protesting persist in hurling the crude material at one in raw slabs.

Another barrier to comprehension they raise is this. On the way up from the deeper layers an impulse may run through a series of association cells, stimulating memories which are entirely individual to the person who experiences them. If he flings those associated ideas at us without a clue, he is really speaking in a foreign language. Although this method is used even in prose, it is of course more frequently employed in what is called modern poetry. Mr. T. S. Eliot, for instance, who is bleakly austere in prose, says that in poetry meaning only plays the part of the lump of meat in the turned-up end of the dog stealer's trousers. Meaning is only required to focus the reader's attention until the poem has him in thrall. Well that may be so, but I still hanker after that bit of meat when I read an alleged poem like this:

> If it was to be a prize a surprise
> If it was to be a surprise to realise,
> If it was to be if it were to be, was it to be.
> What was it to be. It was to be what it was.
> And it was. So it was. As it was. As it is.
> As it as it is. It is and as it is and as it is.
> And so and so as it was.
> Keep it in sight alright.

"Milton, thou should'st be living at this hour. England hath need of thee."

And as to prose, what is one to make of this extract from James Joyce's latest lucubration?

"The flossies all and the mossies all they drooped upon her draped brimfall. The bowknots, the showlots, they wilted into woeblots. The pearlagraph, the pearlagraph, knew whitchly whether to weep or laugh. For always down in Carolinas lovely Dinahs vaunt their views."

This is bad enough, but it is even more serious when a critic tells us that this is slapstick raised to the status of art, and that the delight which one finds in such words is sharper than the ordinary pleasures of prose. Surely it is time, in the name of reason, to challenge this pretentious high-brow nonsense and to call its bluff.

It is interesting to recall, by the way, that a tendency to link words together by sound rather than by meaning is a reversion to an infantile mode. The repetition of such sounds is attributed to the control over the speech not being as yet completely developed. It is shown in the first words the child speaks "mamma, papa, nana," and this kind of repetition is to be noted in the stories which delight very young children. It is therefore not without significance that one of the new artistic movements christened itself "Dada."

Well, the more youthful members of my audience may say, how can you expect to appreciate the new beauties that are being revealed by these modern writers? You are so hardened by established conventions and outworn modes that naturally you are deaf to this new music. Very well, then let me ask you to listen to the views of Mr. John Sparrow, an eminent but youthful critic. His recent book "Sense and Poetry" is a devastating criticism of this new school. May I quote a few passages:

"We are now to be told that . . . experience, hitherto taken to be the raw material of art, should be accepted as its finished product. . . . One of the chief reasons for the unintelligibility of modern verse is the predominance of associations that are personal to the writer. Egoism is carried so far that poems are written for the appreciation of which a complete account of their author's external and internal life is needed. . . . Those who write unintelligible poetry . . . find themselves justified by the beliefs of an increasingly popular school of thought which in effect denies the existence of the intellect. . . . To make the fullest use of the associative value both of words and of what words stand for has been the task of literature since literature was first attempted. . . . Modern writers therefore do not break new ground in paying attention to the effects of association; what is new in their writing is the result of their paying attention to association alone and exploring it so thoroughly that meaning is entirely or almost entirely superseded."

Or as Mr. Desmond MacCarthy says, it is hopeless to reproduce in print the very texture of consciousness, such as leads Mr. James Joyce to record the jabberings of the idiot or flat-headed savage who talks unheard in the backward abyss of our minds and sometimes screams audibly in delirium.

Mr. Sparrow has clearly defined the symptoms, but as medical men we want to go behind the symptoms and determine the causes at work, here as elsewhere. Mr. Gerald Heard in "These Hurrying Years" has attempted this task. He attributes them to a growth in self-consciousness, a new realisation of what the mind is doing. While this development has seemed to many onlookers only "the treason of the clerks," the betrayal of reason, the blind escape into childishness, superstition, and self-comforting illusion, he does not so regard it. What we have to focus upon is the force, the cause which has produced that reaction. He thinks that we need not be unduly perturbed by

the new experiments, since they are all part of a growth which, though largely blind to-day, is making for a new synthesis. He admits that this may be too optimistic, and I think it is clear that the pendulum has swung too far. I have great belief in the capacity of life to adapt itself to its environment. But of one thing I am sure, we shall never achieve a new civilisation by denying reason its place. Even though we realise that it does not include the whole of life, it must have the final word. Earlier in the year I quoted a saying of Gaskell's which will bear repetition now—"The race is not to the swift, nor to the strong, but to the wise."

When I was seeking for a title to express the viewpoint to which I wished to direct your attention, I remembered an essay by that charming writer, Stephen Paget, in which he said:

"Great words and phrases (may) come down in the world. For instance, I have reason to believe—a phrase of noble birth and of the utmost refinement—is at the mercy of gossip. I have reason to believe that the conductor gave me sixpence short on purpose; and so forth. Quick, let us do honour to this old phrase—for it is descended from two of the stateliest of all words."

It occurred to me to adopt that phrase, hoping thus to make a plea for the restoration of reason to its throne on the highest level of the nervous system—the last to come, the first to go, but all the more to be cherished on that account; reason is the judge and assessor of our instincts and our emotions, which, however necessary for driving energy, if uncontrolled are but blind leaders of the blind. We have reason by which to think. . . .

THE INSTITUTES OF MEDICINE

By M. H. MacKeith, D.M.

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Like a certain Dickens character I have a "King Charles' head"—a subject which puts itself into any topic of conversation. Mine is the Medical Curriculum; it is a phrase of grim implications to many, but I feel it has been misjudged. Years ago, as a student, I found harsh words to write about the General Medical Council—the Council of *Education* as well as of Registration—and of the burdens they laid on the shoulders of their unfortunate victims. Advancing age or possibly wider experience has brought me to the penitent conviction that all these apparently irksome regulations arise from a single-minded and sincere desire to ensure that the medical practitioner in Great Britain shall be properly qualified.

A point I wish to develop here is my profound belief in the essential unity of the medical student's training and to deny that there is any fundamental reality in the division which is so strongly suggested by the different "subjects" and by the separate examinations. Having stated this belief I find myself faced with the question of where, in point of time, to start. Should school training, home surroundings, prenatal psychology, and hereditary influences be taken into account? The line must be drawn somewhere and I propose to begin with the normal entry to the medical school—though I must say that the best brief advice which could be given to a medical student is "Choose your parents wisely."

I suppose the first studies to be considered are the ill-assorted three—chemistry, physics, and biology. The first two have long been accepted as leading closely parallel lives but we must now look on them as twins, and uniovular twins at that. There is no matter of real interest in the study of living organisms which can be truly looked on as in the domain of one of these subjects and *not* of the other.

There is sometimes a tendency to look on physics and chemistry as being dull—as a discipline in mental gymnastics. Surely the preferable attitude is to consider them as representing the rules of the game—the game that is played throughout our universe by inanimate and animate objects alike, astronomically as well as gastronomically. Still, in many ways it is in the step-sister, biology, that I am most interested at the present. Passing suddenly from a lack of attention or even a positive neglect in her younger years to the enjoyment of a much wider freedom later on, she serves as an admirable illustration of nursery tradition. Even here there are, I venture to think, imperfections; the balance of biological teaching in schools tends yet to be Victorian. The attitude is changing rapidly and widely as well; it is not only the so-called "educated classes" who now evince a lively interest, when they get the opportunity, in simple animal dissections, and discussions of function. The change is of immense importance in the advance of the practice of medicine; some of the dread mystery of disease will disappear from the patient's mind and opportunities for earlier treatment thus arise.

Before passing on to the pre-clinical subjects of the present day, I am going to read a quotation from Osler.

"Each one of these is a science in itself, complicated and difficult, demanding much time and labour for its acquisition, so that in the few years which are given to their study the student can only master the principles and certain of the facts upon which they are founded. Only so far as they bear upon a due understanding of the phenomena of disease do these subjects form part of the medical curriculum, and for us they are but means—essential means it is true—to this end."

May I emphasise the words "master the principles"? The acquisition of a number of "facts" likely later to prove useful in the practice of medicine is *not* an appropriate study of the subject.

When Osler was appointed, almost exactly 60 years ago, to teach the Institutes of Medicine at McGill the subject comprised physiology, histology, and pathology. And this is the interpretation which I put on my title.

I do not wish to deny the right of anatomy to a place, and even a quite extensive one in the pre-clinical period, but I think that the greater share of the whole time allotted to it should be in the earlier part of this pre-clinical period and that the other subjects of the London second M.B. should find their fuller representation at the later end. I believe that the essential turning-point in the medical course is not, where it now tends to be, on passing the second M.B. but about six or nine months earlier where, as I have suggested above, anatomy should begin to ask less time and the institutes to increase. (Please remember that I do not suggest that the study of anatomy should cease here; it should continue all along.)

I am almost without interest in the structure of a living organism except in so far as it is to be regarded as influencing what that organism can *do*. What we are concerned with in medicine and in everyday life is essentially the function of the animal and only at second-hand its constitution. I believe that this has too often been overlooked with unfortunate results to the medical curriculum; and overlooked because of the separation of anatomy from physiology and the budding-off of histology,

of biochemistry, and of pathology from one side or the other. We tend to lack a unitary conception of pre-clinical studies, and if we *could* bring back the *one* subject of the Institutes of Medicine again, I should be prepared to welcome anatomy within the portals. I am not, of course, proposing to deny that the observation of structure during clinical study and during practice is useful; on the contrary, I look on the unaided senses of the trained observer as of the utmost importance and they are much more able to appreciate structural changes than functional ones. But I wish to emphasise that the diagnostic and prognostic importance of such structural changes lies essentially in the indication which they provide as to probable alterations of function. If you find a patient with bright blue sclerotics the true importance of this observation is not that he is peculiarly likely to break his bones but that he is thereby made likely to be unable to *do* things. (I am, I admit, conveniently overlooking the existence of pain.)

Let me return, however, for a moment to the conception I mentioned earlier of a turning-point in the orientation of medical education some months before the present position of the London second M.B. I want to suggest that it is here or hereabouts that we need the change over from a preponderantly static to a primarily dynamic conception of the living animal and of man in particular. Up to this point the "language is being learnt" and then comes more thoroughly the turn of physiology which should shade off into pathology or, I should prefer to say, shade *on* in this direction and later and still imperceptibly into the clinical subjects and associated ward work.

I want to emphasise my firm belief that fundamental to a sound conception of the activities of the living body is a continual remembrance of (1) the animal as a whole, and (2) the everchanging being of that animal. Of course these comments apply not only to physiology—the study of the normal organism—but perhaps with even greater force to pathology and clinical medicine. Here again remember that pathology and medicine are essentially the same subject. Certainly in the post-mortem room and the morbid anatomy laboratory we are getting a "still picture," to borrow from the language of the cinema, whereas in the wards the film is still going on. With the still picture details can be studied and observed (and form a useful and instructive check on the accuracy of the necessarily superficial observations made during life), but it is only in life that the inter-relationships of various functions can be seen or deduced.

Remember too that a "disease" is *not* an entity; it is a process, and the rate and even the detailed character of that process depend enormously on the living man in whose body that process is going on. The dynamic conception of the "diseased life" is probably even more important than that of the normal one, since the variations which occur from time to time are more extensive, and furthermore since in each case there is a breaking-point at which the natural protective mechanisms of the body, possibly long heavily strained, are no longer able to react. The consultant would in almost all cases be severely handicapped had he to rely solely on a single examination of the patient; the past history of the case, skilfully elicited, enables him to construct for himself a sort of moving picture. So, too, in general practice, it is the change in the patient's condition from visit to visit—a series of temporal cross-sections—upon which diagnosis and more importantly prognosis is usually based.

In conclusion I want to remind you that in the future we must look to scientific medicine for advance in the treatment of disease. Centuries of empiricism have yielded many valuable remedies, but who can look back on the discoveries of the last 30 or 40 years and doubt where the path of progress lies. But scientific medicine waits on our knowledge of the normal—of the details of the processes going on in our physiological make-up and of its psychological comments. Thus not only for the education of the medical student of to-day but also for the advance of knowledge and the further relief of suffering in the future we must look in great measure to the Institutes of Medicine.

MEDICAL SCIENCE AND THE PATIENT

By Sir John Rose Bradford, Bt., F.R.C.P., F.R.S.
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It is a mistaken and short-sighted view to take that medicine, as a science, is merely applied physiology, although it is profoundly true that the associations of physiology with medicine are very intimate. The training you have received in the so-called ancillary sciences, chemistry, physics, biology, and the knowledge you have acquired in the more closely related sciences of physiology and anatomy, must be regarded as preparations for the acquirement of a knowledge of the science of medicine, for not even a profound knowledge of one or even of all of them can be regarded as a substitute for a knowledge of medicine as such. This may seem to be so obvious as not to require refutation, but no lengthened experience of the practice of our profession will reveal, to all who have eyes to see or ears to hear, that nothing is more common than to transfer results obtained in one or other of these fields of work to the practice of our art without adequate consideration of the facts of the science of medicine as such.

You will soon realise that the true place of the ancillary sciences and of anatomy and physiology is not merely to afford immediate practical and direct help in the recognition of individual diseases but rather to develop a scientific habit of mind and to form a true idea of the general nature of the activities of living matter, and perhaps most important of all, to get to believe firmly the doctrine that like causes produce like results in the world of living matter as well as in the world of non-living matter.

Now this doctrine of like causes producing like results is of supreme importance in the study of such a science as medicine, where it is a commonplace to say that no two cases of any disease are really alike. To a person of non-scientific mind this well-known statement of no two cases being really alike is apt to engender a peculiar habit of mind and of conduct—namely, that there is something peculiar about living matter and therefore of its diseases that so to say places it above laws. To the scientific man the obvious fact that speaking roughly no two cases of a disease are alike notwithstanding that they seem to be, does not invalidate the law that like causes produce like results, it merely conveys to him the suggestion that although they seem to be alike they are not so in reality. This is not a small matter; it is fundamental. The one type of mind concludes that all is uncertain, that there is no fixity, and produces a hopelessness of outlook and is a bar to progress. The other sees that there is a problem and proceeds to investigate, and it may be discovers

that in a given instance that although the cases seemed similar they were not really, and discovers that the causes were different and that the law of like causes producing like results still obtains. When I was a student I was taught that typhoid might last four weeks, and that occasionally it lasted only two weeks, thus it was not certain. Many years later it was discovered that the two-week cases were paratyphoid and the four-week cases typhoid; that the two diseases although due to allied organisms were not identical but resembled one another in their clinical course, although the causative organisms responsible for them presented differences thanks to which they could be identified, and thus the causes of the two were really different; and so the law of like causes producing like results still obtained, and that it was not true that typhoid fever sometimes lasted four weeks and sometimes two weeks.

In dealing with such a complicated matter as a disease affecting an individual it is very essential that the mind of the practitioner should have as a basis a body of certain knowledge, and one of your main difficulties will often be to distinguish between what is known as certainty and what is merely founded on opinion or on mere dogmatic statement by authorities of very varying degrees of reliability. This is the problem that confronted Harvey and I suppose it will always confront us. It is here that the training you have received in the ancillary and preliminary sciences will be of the greatest value to you in training your intellectual processes to approach the question from the right point of view. In my opinion the rigid methods of thought inculcated by a good scientific training in the ancillary and preliminary scientific subjects of the medical curriculum afford an indispensable basis for the proper study of medicine as a branch of scientific knowledge; I hold that this is their main utility, and that their direct usefulness in the practice of medicine, great as it is, is really of secondary importance so far as the progress of the science of medicine is concerned. In the practice of the art of medicine, however, it is otherwise. There the facts of anatomy and of physiology are of necessity of paramount importance in our daily work, and that brings us to the consideration of some points as to the art of medicine, which is a very different matter to the science.

The science of medicine deals with medicine as a whole, with the natural history of disease, its pathology, clinical course, &c.; but the art deals primarily with the individual patients, and for its successful pursuit calls for qualites that may not be so necessary for the furtherance of the science. It may perhaps be said that the science of medicine has for its subject matter "cases," whereas the art of medicine has to deal with patients. Now patients are human beings with many or all of the aspirations and the failings that are inseparable from human nature. Further, patients have anxious relatives also sometimes with failings. One of the most fundamental lessons to be mastered as early as possible in the career of the practitioner is that nothing should be said or done to a patient by the practitioner that would be resented by the practitioner if it were done or said to him if the positions were reversed and he were the patient and not the doctor. No doubt it is rare, probably very rare, for acts to be done which would be open to this criticism, but due consideration is by no means always given to what is *said*, and much needless mental suffering is caused by incautious statements to patients or their relatives about their ailments. Statements often merely thoughtless, but sometimes not to be justified. Thus nothing is more common than for the doctor to be equally dogmatic in his statements on facts which are definitely known to be established, and on other so-called facts that are merely matters of opinion and far from being established with certainty. This is a fertile cause of mistakes and is also responsible for much of the adverse criticism of our profession by the more intelligent layman who does not fail to observe that many dogmatic utterances are found in no long time to be quite erroneous. Then he is prone to believe that this is possibly true of all medical ex-cathedra utterances. You are justified in speaking with confidence on what is certainly known, but you must never forget that much of what the public really desire to learn from us is not known with the certainty that justifies dogmatic statements.

The progress of our art has been such that we can now with confidence of accuracy label a great and ever-increasing number of diseases, and to say this is a matter not only of pride and satisfaction, but we recognise that it is essential and fundamental to further progress. The patient and his relatives are not really interested in this, as is quite natural. To them the one essential is to know whether he will recover or not. Now you can be as dogmatic as you like as regards the label or diagnosis if the facts justify you, but you must realise that diagnosis and prognosis are very different things and based on quite different facts. The one is on a more secure basis than the other, and it is very often most unwise and quite unjustifiable to speak with equal certainty as to these two different things. Further you will be judged not by your diagnostic but by your prognostic utterances, and if the latter are falsified, as happens to all of us (both in diagnosis and prognosis), medicine, itself, suffers in the judgment of the laity and often quite unfairly. This cautiousness in speech does not mean that you should say nothing, still less that the matter should be obscured by a cloud of words especially of professional jargon; but the actual position should be put in as few words of the simplest language possible. Further, never forget that no patient and no anxious relative is really quite normal when face to face with the doctor, especially when he is summing up and pronouncing judgment, and that this applies to all patients, even those who either regard themselves or are regarded by others as certainly above the average intelligence.

You will hear in the course of your career many astounding stories of what other doctors are said to have said, and in not a few instances you will hear some really amazing statements that you yourself are said to have made; and occasionally you will be told by the patient himself that on such and such a day you said so and so, when you know that you never said any such thing either to this patient or to any patient in your whole life. If you realise that patient and relatives are apt to be very nervous when hearing any verdict, that will emphasise the urgent necessity of speaking as little as possible and as simply as possible. It is also advisable not to accept as accurate the astounding statements that you are informed have been made by your fellow practitioners. By following this rule you will at least avoid much annoyance, and possibly you may be induced to take a more hopeful and charitable view of your fellow creatures than you would if you accepted such stories as credible. Although in some respects patients are often in an abnormal mental state when confronted with the doctor, on the other hand the realities of

illness strip from us many of the trappings and artificialities of life, and you have the great advantage where proper understandings are established between the patient and the doctor and there is mutual regard of doing your work under the conditions most favourable for its success.

To be a good doctor many qualities are required besides the professional and technical knowledge that it is the duty of the medical school to teach. In the hospital the daily contact with the sick will teach you some, but it is not until you are actively engaged in practice that you will learn others. They all centre on the fact that patients are human beings and will show a most extraordinary response to any kindness and consideration shown them when they are prostrate with pain and suffering. Never forgetting that perhaps the worst suffering is mental and not physical, and that much misery may be caused by a careless word as well as by carelessness and roughness in physical examination.

POST-GRADUATE LECTURES

SEVERAL of the London teaching hospitals have been holding short post-graduate courses during the past fortnight. As in previous years, we propose to publish abstracts of some of the lectures delivered. Of the three which are summarised below Dr. Whitby's and Dr. Young's were given at the Middlesex, and Dr. Hamilton's at Charing Cross Hospital.

THE MODERN TREATMENT OF STAPHYLOCOCCAL AND PNEUMOCOCCAL INFECTIONS

(DR. L. E. H. WHITBY)

I WILL deal first with superficial localised infections such as boils and carbuncles, neglecting deep-seated surgical conditions such as perinephric abscess and osteomyelitis.

The cure and prevention of boils is a very uncertain undertaking. Most men in practice have at one time or another used one and more of numerous remedies and, in the end, have despairingly handed the patient over to a rival practitioner. In other cases the first or second remedy may appear to have worked miraculously. The remedies in common use may be classified as :—

(1) *Specific.*—Vaccines, autogenous or stock, which are a rational form of therapy. These may be given by subcutaneous injection or sometimes by the mouth.

(2) *Non-specific.*—The injection of manganese, tin, S.U.P., or whole blood. This form of treatment depends for success upon shock.

(3) *Adjuvant.*—Yeast, iron tonics, general stimulants, and the control of ancillary conditions such as diabetes.

I have used most of these remedies and believe that some of them may be partially effective. In the case of vaccines considerable experience is necessary to get the best results. Autogenous vaccines are undoubtedly superior to stock preparations and there is no doubt that the optimum dosage varies with the patient. Should no effect be obtained with some six doses, it is rare for there to be any benefit by using more. The weak point of vaccine therapy and protein shock methods is the absence of any control other than the clinical observation of cure or relapse. No one can say of a person in whom a boil has disappeared that he is probably safe from a recurrence. Any method of immunisation which permits a control in the form of an accurate titration of immunity would therefore be a distinct advance.

The staphylococcus has been shown to produce at least three types of toxin; the first of these is actively hæmolytic, the second has a necrotising action on the skin, and the third produces rapid death in experimental animals. The hæmolytic toxin can be easily demonstrated and titrated in the laboratory whilst its antibody, the antihæmolysin, can be estimated in any sample of blood-serum. The dermo-necrotising toxin, the one probably concerned in skin lesions, is more difficult to demonstrate as an individual procedure, but its antibody seems to be produced in parallel with the antihæmolysin. A titration of antihæmolysin in a patient's blood-serum supplies useful information as to immunity before and after treatment, and it allows us also to form some idea of the probability of relapses, the suitability of dosage, and the amount of material which should be injected. The discovery of staphylococcal toxin provided an antigen for the preparation of a potent and active antitoxic serum. Furthermore, because the toxin can be converted into toxoid, there is also an antigen which can be used with safety for the active immunisation of human beings. These discoveries have opened up a field comparable to that now covered by the various immunisation methods for diphtheria.

Staphylococcal toxoid is not yet available for general use. The safety and value of the substance is first being investigated by the Therapeutic Trials Committee of the Medical Research Council, using standard preparations produced mainly by Messrs. Burroughs Wellcome.* In my own experience it has given more consistent results in a series of over 100 localised staphylococcal infections than any other antigen I have previously used. No case has failed to show a rise in antihæmolytic titre of the blood, relatively few have failed to respond to treatment, and anything more serious than a slight local reaction has been extremely rare. The treatment has usually occupied about four weeks whilst the number of injections and the volume injected are both small. The response to treatment, as measured by antihæmolytic titre, is variable from subject to subject. Some have a high titre at the outset and this is especially so with deep-seated lesions. Some respond to small doses, others require continuous treatment. I have found that the best rule is to aim at raising the titre to at least ten times its original level rather than to name a fixed level above which any given patient may be said to be immunised. I am quite sure that staphylococcal toxoid after proper trial will find a prominent place in the future treatment of localised staphylococcal infections.

It is natural to inquire whether other antigens, vaccines, and non-specific substances also raise the antihæmolytic titre of the blood. This point has been but little investigated and my own experience is confined to a very small series. A few have shown minor rises in antihæmolytic titre with autogenous vaccine but most have not. When there has been a rise it seems probable that the vaccine contained

* Publications on its value have been made by Parish, O'Meara, and Clark, by H. J. Parish at the British Medical Association this year, by C. E. Dolman in America, and by H. Gross in Germany. (See THE LANCET, 1934, i., 1054, 1074; August 4th, 1934, p. 261, Sept. 1st, p. 502.)

traces of toxin or toxoid which in a sensitive person is rapidly effective.

For staphylococcal septicæmia and for acute localised infections with severe toxæmia the obvious specific treatment is the administration of antitoxic serum. I have found this serum at least as potent as its streptococcal equivalent. It is worth using in large doses in septicæmia, osteomyelitis, and especially in severe staphylococcal intoxication, such as may occur from an infected burn of the skin. I usually combine intensive serum therapy with a small blood transfusion, believing that the fresh human complement supplied by the transfusion assists the action of the serum. I would emphasise that if serum treatment is undertaken there should be no hesitation about using large doses. If one is afraid of serum reactions—and there is no need to be afraid if an adrenaline syringe is kept handy—it is well to remember that the shock produced by 10 c.cm. of serum is as great as that produced by 100 c.cm.

The modern treatment of *pneumococcal infections* includes the use of Felton's serum. This serum is a concentrated product standardised in mouse-protective units, and an amount of 20 c.cm. is suitable for an initial dose when serum therapy is contemplated. The serum is injected intravenously and as the onset of shock may be rapid an adrenaline syringe should be ready. The serum is effective only against infections with the type I. or type II. coccus and there is no justification for using it empirically in the absence of a knowledge of type; in the first place it is expensive and in the second place it may cause extreme distress to a patient without any chance of benefit. Correct typing is an essential preliminary, and I would emphasise that direct typing from the sputum is difficult and requires much experience. Publications describing direct typing have given a very false idea of the ease with which it can be performed. When direct typing fails mouse inoculation has to be performed, but this necessitates a delay of only a few hours. Typing is best done by an expert, preferably on a sample sent by hand or by train, for the fresher the specimen the more easily is direct typing performed.

I do not advocate the use of Felton's serum as a routine in type I. infections, but it is very valuable in selected cases. Type I. pneumonia affects mostly relatively young persons in whom, a priori, the prognosis is fairly good. Treatment of any case of type I. infection with serum almost always accelerates the crisis, relieves immediate distress, and hastens recovery, but one has to remember that delayed serum sickness in the form of joint pains, fever, urticaria, and swollen glands may be a distressing sequel. Many authorities say that serum is ineffective unless given in the first two or three days of the disease. It is true that the most dramatic effects are obtained during this period, but I am quite convinced that there may be benefit as late as the seventh day. With late administration there may be no dramatic crisis, but the patient becomes less toxic and less distressed. I am in favour of giving serum in type I. infections at the earliest possible moment when they are old subjects, when they have a complicating factor such as high blood pressure, when there is a previous bad history of chest disease, when the general condition is poor, or when it is obvious that every possible remedy must be exploited in order to save the life of the patient. In a relatively young fit person who appears to have every chance of weathering his own storm I should not use serum. Type II. infections are far more toxic and fatal than type I. Serum is indicated in every case of type II. infection and the earlier it is given the better. Serum therapy appears to have no action in preventing the onset of complications such as empyema.

Prognostic information in lobar pneumonia is supplied by the blood culture and leucocyte count. A positive blood culture during the first two or three days is to be expected, and should not be regarded as of grave significance, but a positive culture persisting after the third day is usually serious. In the initial stages the most favourable leucocyte counts are between 20,000 and 30,000 per c.mm. Counts below 15,000 or excessively high ones, 50,000 or more, have a serious significance. The initial leucocytosis should persist until the crisis, but should drop to the region of 10,000 per c.mm. 24 hours after the crisis has occurred. A fall in leucocyte count during the acute phase is an indication for serum therapy. The leucocyte count is of value for the early diagnosis of empyema, but it should be borne in mind that delayed serum sickness is accompanied by fever and leucocytosis, and has therefore sometimes been mistaken for an empyema. I have been unable to obtain any prognostic information from the determination of the agglutinin content of the blood.

No serum therapy is available for the treatment of type III. and group IV. infections. Some benefit seems to follow the use of small daily doses of vaccine in the early stages. Type III. infections are always serious. Group IV. infections are most common in old people and are by no means as mild as is commonly supposed; the mortality indeed is almost as high as in any other type, with the exception of type III. It is as well therefore not to assume that all group IV. cocci are harmless mouth commensals.

NEW DRUGS AND OLD REMEDIES

(DR. R. A. YOUNG)

FASHION plays no small part in human affairs, including even so serious a matter as the treatment of disease. This often results unfortunately in the trial of ephemeral preparations and the discard of valuable agents. Years ago I was much intrigued by a title of a paper by an old physician—Good Remedies out of Fashion—and by the cynical comment of another on the flood of new remedies—"Make haste to use them while they do any good." There are a few old and tried remedies which have stood the test of many generations, and these are firmly established in our schemes of treatment—notably mercury, the iodides, the alkalis, opium, digitalis, and the cinchona derivatives.

The researches of biochemists, pharmacologists, bacteriologists, and manufacturing druggists, and the investigation of the agents they discover by physicians and practitioners, have undoubtedly served from time to time to give us useful and effective additions to our means of treatment. In adopting new remedies we should always carefully consider their source and weigh the evidence in support of their value before employing them. While we must admit that in the past empiricism has yielded valuable results, in the present times the mechanism of drug-testing is more evolved and the rationale of their action more easy to determine scientifically. This morning I propose to draw your attention to a few comparatively new drugs and remedies which I believe to be useful.

Salyrgan.—In this drug there can be little doubt that we have a valuable addition to our means of treatment of dropsy. That mercurial preparations

can act on the kidney and lead to diuresis is familiar from its age-long use in Guy's or Baillie's pill. Three new organic preparations of mercury—Novasurol, Salyrgan, and Neptal—merit mention. Salyrgan has proved to be practically non-toxic and is therefore now generally employed. It contains 36 per cent. Hg. It is used in sterile 10 per cent. solution and is best given intravenously. Care must be taken that none escapes into the tissues, since it is very irritant. The initial dose is 1 c.cm., and this can be repeated at intervals of two or three days and may be increased to 2 c.cm. It should be diluted to 10 c.cm. with sterile saline or water and injected very slowly. Its efficiency seems to be promoted by giving ammonium chloride grs. 15–20 three times a day in water flavoured with liquorice or other demulcent. The amount of fluid given to the patient should as a rule be restricted to 20 or 30 oz. in 24 hours and should not exceed 35 oz. The resulting diuresis is usually rapid in development and profuse in quantity—frequently 100 oz. or more in 24 hours—and in successful cases patients may lose a stone or more in weight in a week. It is useful in cases of severe congestive heart failure with dropsy, in cases of chronic failure with nutmeg-liver, in some cases of pericardial effusion, and of visceral engorgement in association with pericardial adhesion. It is worth trying, though often less effective in cases of renal disease with dropsy. It is less successful in cases of nephrosis. It can be helpful in cases of cirrhosis with ascites. I have also found it of use in Concato's disease, multiple polyorrhomenitis. There are certain contra-indications to its use, notably hæmaturia, acute nephritis, very advanced renal damage, severe hepatic degeneration, colitis or severe diarrhœa, and in conditions of thrombosis, since it sometimes seems to favour intramuscular clotting.

Coramine.—An effective stimulant or analeptic for emergency use and for assistance in maintaining the circulation in conditions of stress in acute infection is constantly needed. Ether is fleeting in its action; camphor is discredited by the pharmacologists, though some of us still believe in its use in emergency. Coramine seems to be a valuable drug in this connexion. I have used it extensively and am convinced of its value on clinical grounds in conditions of circulatory failure in pneumonia with fall of blood pressure, in cases of shock, and in some cases of coma. It is strongly recommended in the condition of coma resulting from overdosage of the barbitone group of drugs and the basal anæsthetics of the Avertin type. Prof. E. C. Dodds informs me that it is common to find it restore the pulse in the deeply collapsed form of diabetic coma. I have usually given it intravenously in doses of 1 c.cm. two to four times in 24 hours, but in emergency it can be given intravenously in doses of 2–3 c.cm. injected slowly.

Sedormid.—The treatment of sleeplessness is so common a subject for discussion and one which has been so recently ventilated, more especially in regard to the use of the barbiturates, that I hesitate to refer to it. I am, however, so convinced of the necessity for the occasional and even routine use of a sedative, and often of a soporific, in cases of habitual insomnia, that I venture to mention one I have found useful. Sedormid is allyl-isopropyl-acetyl-carbamide and is put up in tablet form. It is recommended to be given in doses of one or two tablets at bedtime. I have often found half a tablet effective in securing restful sleep where there is no pain. In treating obstinate insomnia, and the sleeplessness of acute febrile disease, it is sometimes best to use a mixture of soporifics and sedatives, or to give them in sequence. Sedormid is useful in conjunction with such drugs as codeine or medinal, and also in achieving further sleep when patients wake early after a hypnotic dose or a mixture of hypnotics.

Gold Salts.—These have been extensively employed during the last ten years. Sanocrysin, Allochrysine and Myochrysin are the forms chiefly used for intravenous injection, while allochrysine, Solganol-B-oleosum, oily myochrysin, and oleo-sanocrysin are given intramuscularly. Smaller doses are now used than formerly—0·01 g. being the usual initial dose, with gradual increases up to a maximum of 0·5 g. Injections are given every five to seven days and the total amount given in a course should rarely exceed 5 g. Gold salts are used in the treatment of tuberculosis, both pulmonary and cutaneous, asthma, and chronic arthritis. In pulmonary tuberculosis it is chiefly recommended for active lesions of exudative type, especially those occurring in the contralateral lung during collapse treatment by artificial pneumothorax or after thoracoplasty. It seems sometimes to assist in getting rid of bacilli in arrested cases left with a small amount of sputum. Gold should certainly not be used without strict care, since it can produce severe toxic symptoms, such as fever, malaise, increased cough, and sweating from its effects on the tuberculous foci, and also stomatitis, severe skin rashes, albuminuria, nephritis, and jaundice from its effects as a metallic poison. Sun exposure during and after treatment should also be avoided, owing to the purplish discoloration of the skin which may result. In asthma, special care is necessary. I have seen severe toxic symptoms result from very small doses.

Old Remedies.—Fashion in medicine and the desire to try new remedies have often led to the neglect of valuable means of treatment. Aconite in small doses in fever was extolled by no less an authority than Sydney Ringer some 40 years ago, and though it has been displaced by the coal-tar group as an antipyretic, it can be a useful drug. Antimony, once so much employed as a depressant expectorant in the early dry painful stage of tracheitis and bronchitis, has again come to the front in the treatment of conditions such as bilharziasis. I have found very small doses of copper, such as gr. ¼ of copper sulphate in half a pint of water, twice daily, of great value in some intractable forms of anæmia, in conjunction with iron salts, when they alone failed, and it is now suggested that copper has some catalytic action in regard to iron in treatment. Bleeding has come into its own again, but dry cupping, leeching, and the packs are more or less neglected. The application of cold or hot compresses to the neck in painful sore-throat was a routine method in days past and can certainly give great relief.

By all means let us adopt new methods when they prove more helpful than the old, but let us not assume that every vaunted novelty is an advance.

VOMITING IN INFANCY

(Dr. C. K. J. Hamilton)

Vomiting may or may not be important; it is very common in babies. It is essential to ascertain whether or not there is also diarrhœa and the child should be examined for conditions outside the gastro-intestinal tract such as pyelitis. The nature of the vomiting should be noticed: projectile or through the nose; presence of blood, bile, curds, or mucus. Blood may be swallowed from a cracked nipple or may be due to ulceration. Bile suggests that there is

no pyloric obstruction. Among the causes of vomiting are pyelitis, middle-ear disease, pneumonia, or any acute illness, infections of the gastro-intestinal tract, organic obstructions, and functional disorder.

Some children are born with complete atresia of the œsophagus and everything taken is returned unaltered, with a good deal of mucus. There is no treatment save to ensure a pleasant death. Children occasionally get cardiospasm and present symptoms after a few months of life; the returned milk is alkaline and unaltered. The diet should be non-irritating and bougie dilatation may be used in older children. Pyloric stenosis as a rule causes vomiting 7 to 14 days after birth, and the vomit may be thrown a considerable distance, often through the nose. The child may not vomit very frequently but each vomit may be larger than the last feed and may leave the child quite collapsed. As a rule it contains neither bile nor blood, but both may occasionally be found. Constipation necessarily follows any form of fairly severe vomiting, but a pseudo-diarrhœa often occurs. These children have five or six dark green stools daily, composed almost entirely of mucus. This may lead to a wrong diagnosis of diarrhœa and vomiting. The child loses weight and looks thin and ill. Diagnosis is verified by visible peristalsis and palpable tumour. No case should be operated on until the tumour has been felt; it is unmistakable. The child must lie comfortably with bare abdomen and must be examined just after a feed.

Most people are agreed that surgical treatment is correct in the vast majority of cases. Medical measures are only justified in mild and recovering cases which have been missed; they consist of daily gastric lavage, small doses of luminal (gr. 1/16) or atropine, and a fairly concentrated diet. The operation should not be done as an emergency, but 24–48 hours should be spent in getting the child fit by gastric lavage, a change of diet, and treating the alkalosis (which is probably present) by means of subcutaneous normal saline. Pylorospasm appears in rather older children and is not accompanied by much wasting or palpable tumour. The child is often nervous and irritable. The treatment is medical. Duodenal obstruction in the new-born infant varies from complete atresia to partial block. The vomiting is projectile and bile-stained and the visible peristalsis very marked. The final diagnosis is established by an opaque meal. The correct treatment is operation, though the results are poor.

Vomiting may be due to too large or too frequent feeds. A baby should not have more than 2½ or at most 3 oz. of food per lb. of body-weight. The interval should be at least three hours. Possetting is common in breast-fed babies and obviates overfeeding. It does, however, merge into pathological conditions. In dyspepsia something has gone wrong with the chemistry and the stools are never normal; they may be fermented as a result of too much sugar and too little protein, or fatty—associated with either diarrhœa or constipation—and frequent, sour, curdy vomiting. Vomiting may also be caused by large protein curds. The first thing in the treatment of dyspepsia is to cut down fat and then gradually work up to the normal amount. The fineness of the protein curd must be ensured. Air swallowing is a very important cause of vomiting. A breast-fed baby may swallow air by feeding too quickly or too slowly, or by sucking hungrily at an empty breast. Nasal obstruction is a very common cause; any form of dyspnœa may cause vomiting. The wrong teat may produce it; the teat should be bulbous and should be gently pulled against the child's lips during the feed to prevent air entering. If the child is fed in a sloping position instead of flat, or allowed to "bring up the wind" in the middle of the feed it will not lose milk with the returning air. The nose can be cleared with an ephedrine spray before feeds. Too rapid feeding can be controlled by giving water before the feed or controlling the flow. Many children swallow air when sucking their fingers. An upset and nervous child swallows air, and extraordinarily good results may be obtained from half a grain of chloral given about 20 minutes before each feed.

Habit vomiting appears at about two or three months in an apparently healthy bottle-fed child. The child vomits small amounts at any time. The feeds must be concentrated and small. Lavage and drugs give no result. Tube-feeding for 24 hours sometimes breaks the habit. Rumination does not appear before four months and usually starts from some small gastric upset. The child definitely enjoys the process; but rarely does it under observation; it must be watched from behind a screen. The condition may be serious, producing inanition. Plugging the nostrils with cotton-wool and tying the chin up have been recommended. Laying the child on its face often works and carrying it about incessantly for an hour and distracting it is almost infallible, but very exhausting. The best method is to put it on solid food as soon as possible. Drugs are not very effective.

MEDICINE AND THE LAW

Atophan (Cincophen) Poisoning

AT an inquest on Sept. 27th on a man who died from "acute yellow atrophy" of the liver after taking Atophan for rheumatism, the Birmingham city coroner (Dr. W. H. Davison) declared that the drug ought to be at once placed on Part I. of the Schedule of Poisons. He expressed a hope that the inquest would warn the public and induce members of the medical profession to look upon it in a different light.

The practitioner in charge of the case said that the patient came to him in March complaining of sciatica and he prescribed 20 tablets of atophan, one to be taken three times a day after food. Three days later, as the patient lived some distance away, he gave a second prescription. He thought atophan was a safe drug to prescribe in that quantity; people could obtain it in the ordinary way from the chemist if they wished to.

The Coroner: Do you agree they should have control of it?—A. I have never had any ill-effects from it and I have prescribed it quite a lot.

Q. Do you look upon it as a perfectly safe drug to be prescribed without any special limitations?—A. I always have done up to date.

Q. Did you not look upon it as dangerous?—A. I did not. I had two cases where patients developed a rash. That is all the ill-effects I have known.

Q. Have you used it in thirty or forty cases?—A. Oh yes, more than that. Two years ago my own wife had a course of 100 tablets continuously without any ill-effect whatsoever.

He added that he would not order more than three a day, and he did not consider the quantity he ordered in any way dangerous. He had had no experience of its danger to anyone with a liver or kidney condition.

A third supply was ordered on April 10th, and later the patient went back to work. When seen in May

he was in better health and was reasonably fit. On May 22nd he was injured at work and after the burns he received had cleared up he developed jaundice which the practitioner thought was ordinary catarrhal jaundice. On being called to see the man on June 11th when he was vomiting he found that the jaundice was more marked, and suggested that investigation should be made in hospital. He did not tell the hospital doctor that he had been treating the man with atophan because he did not connect that with his condition.

The Coroner: It appears to me that you were not aware that atophan under certain circumstances might set up the jaundice?—A. Until the 15th of this month I was not.

Q. Were you aware at all that atophan was a drug which in certain circumstances causes unpleasant symptoms?—A. Yes.

Q. But not a symptom that might kill?—A. No.

Q. You did not look upon it as a dangerous drug?—A. No, only a drug which did not agree with everyone.

The practitioner said that the man went to work subsequently after a holiday and then he saw him again at the beginning of September, when he was very much changed. He sent him to hospital.

A temporary medical officer at Selly Oak, giving evidence, said he suspected atophan poisoning and asked the wife for the phial of tablets he had been taking, but only got it after the man's death. Dr. William Whitelaw, chief pathologist of the Birmingham municipal hospitals, who carried out a post-mortem examination, said the cause of death was acute yellow atrophy of the liver. It was a typical case of atrophy caused by atophan. Dr. K. D. Wilkinson, professor of pharmacology at the University of Birmingham, said he had used atophan in his own practice fairly frequently with considerable caution. It was known by various trade names, and he agreed that it was a pity such a drug should have so many names. It was used chiefly for gout and he had found it to act as a charm in certain conditions. It produced very considerable improvement in certain cases, and that sort of thing was very likely to impress patients so much that they would fly to it at every opportunity and were likely to recommend it to their friends. He knew it could be obtained at the chemist's by anyone though it was being considered for the Schedule. His habit was only to prescribe it or use it where other remedies had not proved efficacious. He prescribed three tablets a day on alternate days—that was three days in each week and three weeks in all—and he would not repeat that for a year. He regarded it as a very definitely dangerous toxic drug and 27 tablets, which was just over grs. 200 altogether, was the maximum dose which he would give in any year. Much smaller doses had proved efficacious. Twelve tablets were reported to have caused a death. But, as they had heard, much larger doses could be given without any obvious damage. There were about 50 recorded deaths from the drug. He agreed it might have killed a good many before its effects were known. From 1908 to 1923 there was no recorded instance of poisoning by atophan, and it was used fairly extensively in Germany and later in France and England. He had seen three fatal cases himself. It was a drug which could do damage, dangerous damage, before the dangerous symptoms were recognised. It might be as long as two months after the last dose was taken before those symptoms appeared. The deceased had had something over grs. 300. That was beyond what he would have ordered, but it was not beyond what was quite commonly taken—and taken with impunity. He thought the drug should be scheduled as a poison. It was his own practice not to issue a prescription but to hand over the drug. When the drug was being used he thought the patient had to be kept quiet, had to be rather carefully fed, and should have fluids generously. In his opinion atophan was a drug which should be reserved largely for patients who could be kept watched while they were taking it. He thought there would be damage to a perfectly healthy liver if enough was taken, but an unhealthy liver would be more readily damaged. His recommendation was that the drug should be labelled poison and only taken under a doctor's direction. He considered the makers were doing what was reasonable in giving the warning they gave on the label.

Dr. Horst Neumann, medical director to Messrs. Schering, the manufacturers, said the drug had been used for the treatment of rheumatism and gout for twenty-six years. During that period they had records of 30 to 40 deaths. They recommended that it should be used with caution, and when a layman wrote about it they always referred him to his own medical adviser. During the last eight years 68,000,000 tablets of atophan were issued from their works.

The coroner said that this was the second death within a short period that he had had to deal with in which the effects of atophan had been brought into question. Undoubtedly it had a very powerful effect on the liver, but there was some doubt as to whether it acted on a healthy liver or only on a diseased liver. There were no initial symptoms which would warn a patient that he should discontinue its use, and in some cases damage would be done before anything was known about the effects of the drug. When one realised that the medical practitioner who was prescribing the drug did not expect it to act in the way it did, one could not expect the general public to know anything about it, and he thought a warning should be issued that the drug ought not to be used under any circumstances by any person except under the strict supervision and control of a medical man. At present anyone could walk up to a chemist's counter and buy as much as he liked. It was true that the manufacturers had wrapped instructions round the phial that it should be taken with care, but one knew how lightly those things were regarded, and it did not seem to him that that was sufficient to draw the attention of the public to the dangers attending the taking of the drug.—He recorded a verdict of death from misadventure.

X RAY TREATMENT FOR CANCER.—Recently Sir Charles Hyde, chairman of the governors of Birmingham General Hospital, formally accepted a high-voltage X ray apparatus and a new department to house it, both the gifts of Sir Herbert Austin. The total cost has been £4000. Sir Herbert said that although the apparatus was primarily designed for certain forms of cancer, it had a wide field of useful service in other sections of medicine and surgery. Dr. J. F. Bromley is in charge of the department.

CONGESTED HOSPITALS.—One night recently there were 173 patients at the King George Hospital, Ilford. This was the largest number it has ever contained, and 31 more than its normal maximum. The hospital is constantly congested; beds have had to be put down the centres of the wards, and it is necessary to refuse all but the most urgent cases. During the last two years there has never been a night with a vacant bed.—Scunthorpe War Memorial Hospital, Lincolnshire, is another overcrowded institution. It was originally designed for 72 beds; subsequently ward space was arranged to take 86, but sometimes 94 patients have to be looked after. There is a waiting-list of 300, and it is hoped shortly to provide two new wards containing 54 beds.

CORRESPONDENCE

AN APPEAL TO MEDICAL BENEVOLENCE

To the Editor of THE LANCET

SIR,—It has been my privilege for many years to appeal to your readers for contributions to enable the Royal Medical Benevolent Fund to distribute Christmas gifts. I desire to express my personal gratitude to my many medical colleagues who have so generously responded to the appeal in recent years, and especially to the medical societies and panel committees who, together with branches and divisions of the British Medical Association, have arranged collections at their meetings in aid of this particular need.

In a short letter it is impossible to give any details of the sorrowful lives of those we endeavour to help; in a great many cases tragedy has befallen them. I write on behalf of over 650 beneficiaries, for that is the number on our books, and I feel therefore a great personal responsibility as to whether my appeal will suffice to persuade your readers of the urgent need of a generous response. One medical practitioner, a married man, wrote recently to the Fund that at the age of 66 he had suffered a complete breakdown in health and further work was out of the question. He had done all that was possible to keep going, and was still not in debt as he had drawn on his endowment policies. But he had now come to the end of his resources and had been forced to take his little girl, aged 14, away from school as he could not meet the next term's fees, his income being £60 a year.

The Fund is now helping this colleague with a yearly maintenance grant, but we want at Christmas to give him and many others the unlooked for Christmas gift. We try to distribute 30*s.* to each. I ask your readers to help us to do so. Donations will be gratefully acknowledged by the hon. treasurer, Royal Medical Benevolent Fund, 11, Chandos-street, London, W. 1.—I am, Sir, yours faithfully,

THOS. BARLOW,
President of the Royal Medical Benevolent Fund.

Sept. 24th.

ERYTHEMA NODOSUM

To the Editor of THE LANCET

SIR,—A study of the literature of erythema nodosum brings out two striking points connected with the age of the patients: first, that in childhood the sexes are about equally affected, whereas among adults, females form the great majority of the cases; secondly, that in childhood the ætiological factor is most often tuberculosis, whereas rheumatism is the causative factor in the vast majority of adults. Where contagion has been proved, it has usually been in children, and has been shown to be tuberculous. Recurrences have been noted in both children and adults, which fact is probably in favour of the rheumatic theory of its ætiology.

Dr. J. O. Symes has referred (THE LANCET, 1929, ii., 1033) to four sisters who each had erythema nodosum over a period of 26 years, usually accompanied by tonsillitis; their parents were both rheumatic, and the mother had also suffered from erythema nodosum. Another of his cases had seven attacks between the ages of 18 and 37. These facts support the theory of rehumatic ætiology in adults. Dr. A. Hope Gosse, who has analysed (*Practitioner*, 1913, xci., 240) 100 cases among children, rejected both the rheumatic and the tuberculous theory. Yet his figures show that 48 per cent. of his cases had one or more of the symptoms arthritis, tonsillitis, or chorea, and only 19 per cent. failed to show one or more of his accepted manifestations of rheumatism.

In my own study of 35 cases in adults, 33 were females. The youngest patient was 19, and the oldest 69. The third and fourth decades each accounted for 11 cases, the fifth for 8, and the sixth and seventh for 4. None of the cases gave a previous history of tuberculosis. There was a previous history of rheumatism in 13 cases, and of tonsillitis in 13 cases; six of these overlapped. Included in these 20 are one case who had suffered from chorea, and 2 who had previously had erythema nodosum, one of them twice. Concurrent with the erythema nodosum there were 25 instances of arthritis and 20 of tonsillitis; 15 of these overlapped, giving 30 cases out of 35 who showed one or both symptoms at the time of the erythema nodosum. Seven of the 30 had endocarditis.

These data support the theory that in adults erythema nodosum is usually a manifestation of acute rheumatism.—I am, Sir, yours faithfully,

Manchester, Oct. 1st. A. HILLYARD HOLMES.

To the Editor of THE LANCET

SIR,—Hebra's remarks on the treatment of erythema nodosum were to the effect that a drop of tincture of arnica in a bucket of water would not do any harm. It is most likely that this is the correct attitude towards the treatment of a symptom, which, as Dr. Collis points out, is self-limited in duration. Nobody who has studied the symptom called erythema nodosum would deny that as a symptom it occurs in response to various toxins. In England this non-specificity of erythema nodosum has blinded our eyes to the fact that out of all these various toxins tuberculosis stands first in frequency and importance. When this fact is fully and generally realised much ill-health will be prevented, and I am in entire sympathy with Dr. Collis when he states that he would willingly give up mentioning streptococcal erythema nodosum if thereby he could persuade people to regard every case as potentially tuberculous. It is in great trepidation that I am shortly publishing some cases of aphthous stomatitis associated with recurrent erythema nodosum—and not due to tuberculosis.

I am, Sir, yours faithfully,

Guy's Hospital, S.E., Sept. 28th. G. P. B. WHITWELL.

THE CANCER PROBLEM OF TO-DAY

To the Editor of THE LANCET

SIR,—In an annotation under the above heading in your last issue you say in effect that the belief that cancer is a disease of civilisation is a facile and superficial generalisation founded on wrong premises, the outcome of modern hurry and has been disproved over and over again. As a matter of fact the opinion referred to has been held for over a hundred years, was mentioned with approval by Walshe in 1845, and was afterwards accepted by some of our greatest oncologists. In these circumstances the terms "hurry," "slogan," "facile" seem peculiarly inappropriate.

Then so far from this generalisation having been disproved the evidence in its favour has so grown in the course of years that it is to-day no longer a mere opinion but a widely recognised fact. For confirmation of the truth of this statement there is no need to seek outside our own country or this present century. It is not likely that anyone will dispute the assertion that during these last 33 years

there has been a decided improvement in the cleanliness and sanitation of the people, compared with their state during the previous century. That such is the case is proved by the striking reduction in the diseases of insanitation and, above all, by the saving of the lives of infants and the prolongation of lives at all ages. So notable is the improvement that, as Sir George Newman has shown, the proportion of the middle-aged and aged has increased during this period by over 50 per cent. Yet we all know that cancer as a cause of death is uncommon in the young, common in the middle-aged, and still more common in the old. In brief, the same civilisation which has lengthened the life of the individual has thereby increased his liability to die of cancer.

Again an inevitable feature of our advancing civilisation is its increasing complexity as shown in the increasing use of appliances, many of which are capable of causing cancer. The use of the Kangri basket, the Betel quid, tobacco, alcohol, coal tar, are all evidences of an advance from the state of simplicity of the primitive savage and all are carcinogenic. In our own country and century X rays, radium, tar products as well as those insidious poisons which are poured out in localised sepsis and are now becoming so prevalent are also traceable to the complexities of our civilisation, and all are carcinogenic. And these, as we all know, are no more than prominent examples of a host of mechanical, chemical, actinic agents capable of causing that form of irritation which starts a cancer into being.

Hence the evidence that both the liability to cancer and the activating causes of cancer increase as our particular brand of civilisation increases is simply overwhelming. It would appear that the cancer researcher, failing to make progress in his particular line of work, has turned his attention to well-established and generally accepted truths of oncology. For these large generalisations the detailed and exact methods of the re-searcher, his minute examinations and repetitions, seem eminently unsuitable. Such regurgitation may do no particular harm so long as they are kept within reasonable limits, but when he brings up that which has already been thoroughly digested and then only to spit it out, the process is hardly calculated to advance the cause of cancer or the interests of the body politic.

I am, Sir, yours faithfully,

Reading, Oct. 1st. HASTINGS GILFORD.

*** We should all admit that the same civilisation which has lengthened the life of the individual has *thereby* increased his liability to die of cancer. But the statement that cancer is a disease of civilisation is generally taken to mean that there is something in civilisation which increases the liability to cancer irrespective of the prolongation of life. And of this we lack evidence.—ED. L.

VITAMIN A AND PELLAGRA

To the Editor of THE LANCET

SIR,—In your leading article of last week entitled Vitamin A and the Skin no mention is made of pellagra. It may be of interest therefore to recall the fact that the characteristic lesions of the skin, now considered to be a manifestation of a vitamin-A deficiency, were first described in 1911[1] (by myself) in association with pellagra in natives of Central Africa. Attention was also drawn at that time to the occurrence in these cases of those other lesions since noted by recent observers—the irregular erosions of the tongue, the excoriations at the angles of the lips, together with a similar condition at the angles of the palpebral fissures, the free border of the prepuce, about the anus and vulva. Recent authors quoted in your leading article have also noticed an association of the skin lesions with symptoms of peripheral neuritis, dimness of vision, night-blindness, mental and physical apathy, diarrhœa, &c. —all symptoms common to pellagra. In fact many of the cases of the so-called vitamin-A deficiency syndrome present the picture of pellagra without the pellagrous eruption.

This is of interest in view of the fact that Mellanby[2] believes pellagra to be due essentially to a vitamin-A deficiency. He thinks that the nervous lesions found in his experimental animals fed on a vitamin-A deficient diet are comparable to those in pellagra, and further holds that the pellagrous eruption is due to the same deficiency; he says "the pellagrous skin lesions are clearly due to loss of a neurotrophic control." To meet the objections of those who have followed Goldberger, he suggests that vitamin A may be rendered ineffective "in the absence of some other nutritional factor such as vitamin B_2." Mellanby adds: "My criticism of many of the clinical investigations on pellagra is that too much attention has been focused on the skin and alimentary lesions and too little on the underlying nervous lesions, which seem to me the basis of the whole disease." I would like to add that there appears to be a danger that too much attention will be focused on the mere deficiency of some one or other vitamin in a diet and too little on the mechanism of the production of the pathological processes, and on the possibility of other positive factors playing a part, as will perhaps be realised by those with a clinical knowledge of pellagra. Your leading article suggests that "the time has come perhaps when so important a condition should have a less cumbrous name than "vitamin-A deficiency disease," and Nicholls has already proposed the word "phrynoderma." Would it not be wiser to wait until more exact knowledge shall have become available?

In conclusion may I urge upon all those who have the opportunity of seeing these skin lesions the necessity of looking out for cases of pellagra. Pellagra may easily go unrecognised, and mild cases may easily be missed.—I am, Sir, yours faithfully,

London, W., Oct. 1st. HUGH S. STANNUS.

[1] Stannus, H. S.: Trans. Soc. Trop. Med. Hyg., 1912, v., 117.

THE UBIQUITOUS COLD

To the Editor of THE LANCET

SIR,—During the past few weeks various reports have been published of the work done for the public health of the nation by the medical profession. Has not the time now come to attack the problem of the common cold, which is, to many persons, such a real menace? The season will soon be here when a large proportion of the community gets cold after cold, against which practically nothing is being done to protect them. Hay-fever and asthma have attracted public attention, and their causes, prevention, and treatment are being carefully studied. All doctors who have to deal with diseases of the ear, nose, throat, or chest agree that a cold is the starting point of many equally disabling conditions. And yet there is no concerted action to discover an adequate treatment for a cold in the head or the means for its prevention.

I am, Sir, yours faithfully,

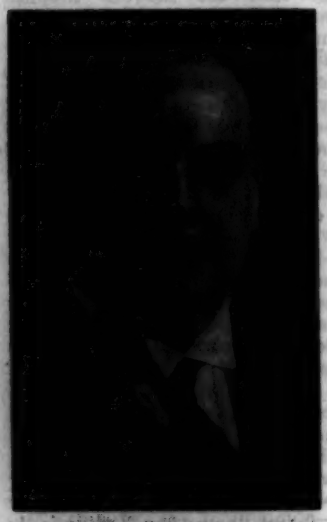
GORDON TIPPETT,
Medical Superintendent, Nordrach-upon-Mendip
Sept. 24th. Sanatorium.

[2] Mellanby, E.: Nutrition and Disease, 1934.

OBITUARY

BARRY KEYTE TENISON COLLINS, M.D. Camb., F.R.C.S. Edin., F.C.O.G.

On Sept. 23rd Dr. B. Tenison Collins, of Cardiff, had a cerebral hæmorrhage while he was on board his motor yacht off the port of Barry in the Bristol Channel. Distress signals were hoisted but some time elapsed before he could be taken ashore and conveyed to Cardiff Royal Infirmary, where he died the following morning. His sudden death terminated a family association with the gynæcological department of Cardiff Royal Infirmary of more than 30 years' duration. Born in 1887, the younger son of Edward Tenison Collins, one of the pioneers of gynæcology in South Wales. Dr. B. Tenison Collins was educated at Llandovery College, and Trinity College, Cambridge, taking his clinical course at the Middlesex Hospital. He qualified M.R.C.S., L.R.C.P. in 1914 and after holding posts as house physician at the General Hospital, Birmingham, house surgeon at the Cardiff Royal Infirmary, and extern at the maternity department of the Hôpital Boucicaut, Paris, joined the R.A.M.C. (T.F.). In this capacity he saw active service in Gallipoli in 1915, in Egypt in 1916, and in East Africa from 1916 until the end of the war. After demobilisation in 1918 he returned to Cardiff to work for his F.R.C.S. Edin., which he secured in 1920, and in 1921 began what was to be his life's work as assistant to the professor of obstetrics and gynæcology at the Welsh National School of Medicine. In 1924 he was made junior honorary gynæcologist and obstetrician on the staff of Cardiff Royal Infirmary, and in 1931 he was promoted to the senior staff and became lecturer at the school of medicine on the retirement of Sir Ewen Maclean. With these and several hospital appointments in the environs of Cardiff his professional status was soon established and he rapidly acquired a reputation as a sound gynæcologist of considerable judgment and great operative skill; as a teacher and lecturer he was clear, concise, and forceful. Practice came to him rapidly and his professional services were sought over a wide area. His outlook was essentially practical; he was gifted with mechanical aptitude to an unusual degree and this was manifest not only in his operative technique but in many other ways at the Royal Infirmary and in his own home. The fact that his contributions to gynæcological literature are but few is in keeping with the general reticence of his character. On committee he never spoke unless he had something of importance to say and his views thus always commanded attention and respect.



DR. TENISON COLLINS

[Photograph by Crosby's Studios

Dr. Tenison Collins had a kindly and essentially sanguine disposition, and his cheerful presence will be greatly missed. He found time for many interests outside his professional activities. One of the chief of these was motor yachting on the Bristol Channel; he was also an industrious gardener with a particularly wide knowledge of rose culture, a keen photographer, and an expert on the recent developments of wireless transmission.

He married Mildred, daughter of Mr. H. Brunel White, who survives him with one daughter. He was particularly happy in his home life and enjoyed the friendship of a large social and professional circle, which was well represented at his funeral service on Sept. 27th at the Chapel of the Cardiff Royal Infirmary.

FREDERICK ANASTASIUS SAUNDERS, F.R.C.S. Edin.

Dr. F. A. Saunders, who died on August 27th, was a well-known figure in the Eastern Cape Province. Educated at King Edward VI. School at Berkhamsted, he studied medicine at University College, Liverpool, and the University of Edinburgh, qualifying in 1882 and taking the surgical fellowship two years later. For a time he practised in Fifeshire, holding Admiralty and other appointments, but in 1892 he went to the Cape and settled in Grahamstown where he became medical officer of health and later hon. medical officer to the Albany General Hospital and the Prince Alfred Infirmary. From the first he took part in medical politics, becoming president of the local medical association and of the Eastern Province branch of the B.M.A.; he was also a magistrate. Dr. Saunders was always drawn to soldiering and held the rank of major in the Third West Yorkshire Regiment; he was colonel of the First City Volunteers and First City Regiment as well as senior commandant of the local rifle association. In the South African war he gained various distinctions, including the Langeburg medal. He was also a prominent freemason and became district grand master of the Eastern Province. A personal friend of the late Dr. Starr Jameson, he was at one time chairman of the local Unionist party. He married first the stepdaughter of the eleventh Earl of Lindsay and, in 1893, the daughter of Prof. Meiklejohn of St. Andrews, who survives him with five children. He was buried at Grahamstown on August 28th with military honours.

THOMPSON CAMPBELL, M.D. Glasg.

Dr. Campbell, who died on Sept. 22nd in a Leeds nursing-home after a short illness, had been for 15 years medical superintendent of the Middleton Sanatorium, near Ilkley. Born in Glasgow, he was educated at Hutchinson's grammar school and Glasgow University, where he took many honours, including the Sir William Gairdner prize in clinical medicine. He graduated in 1895, taking the M.D. with distinction in 1900, and held house appointments at the Western Infirmary. After a voyage to India he decided to specialise in tuberculosis and did excellent work at Quarriers' Homes, Bridge of Weir, in organising and introducing new methods in the treatment of tuberculous patients, going on to the Ellerslie Sanatorium, Crieff, and the Ochil Hills Sanatorium, a newly built institution with modern equipment. In 1912 he entered the service of the West Riding of Yorkshire as chief tuberculosis officer,

and for seven years organised dispensaries for the examination of tuberculous patients. He travelled extensively in Switzerland, Germany and America, studying methods for the treatment of tuberculosis, and finally in 1919 he was appointed medical superintendent at Middleton. Here, with 300 beds for the treatment of male patients, he found scope for his energy. "He made no compromise," a colleague writes, "with error or slackness in work. He did not spare himself. He knew every patient in his sanatorium; could tell you off-hand his name, condition of his chest, including X ray examination and whether his sputum was positive or negative. He knew himself what it meant to have tuberculosis, and the more ill a patient the more he gave of his best. He cared little for pleasure, and he spent his money freely in helping and relieving patients whom he knew to be in distress. He will be greatly missed in the West Riding." Three years ago Dr. Campbell was appointed one of the consulting tuberculosis officers for the West Riding. He died at the age of 62 years, leaving a widow but no children.

HENRY WILLIAM BEEDHAM, M.B.Camb.

Dr. H. W. Beedham, who died on July 31st after a severe heart attack, studied medicine at Christ's College, Cambridge, and the London Hospital, taking his degree in 1895. For some years he was engaged in general practice, first at Norwich, then at West Hampstead, and at Cricklewood. In 1914 he began to specialise in ophthalmic work holding appointments as clinical or refraction assistant at Moorfields, the Royal Eye Hospital, Southwark, the London Hospital, and at King's College Hospital. He took the D.O.M.S. in 1922. In the early part of the war Dr. Beedham worked in France under the Red Cross Society; and in 1916 he joined the R.A.M.C. and was soon made a captain; in 1917 he was invalided home. Dr. Beedham was a keen churchman, acting as churchwarden at Emmanuel Church, West Hampstead, for many years. He held the position of chairman of the medical board of the Church Missionary Society for six years. He was beloved by all those who worked with him.

MEDICAL NEWS

HOSPITAL DINNERS

St. Thomas's Hospital

At the old students' dinner at the Dorchester on Sept. 28th Dr. W. L. Wainwright, of Henley-on-Thames, took the chair and expressed his sympathy for the younger generation. The country, he feared, would soon be covered by one vast panel scheme; the day of the single man was over, and groups of five or six practitioners were needed for the work that had to be done. As for the student, instead of feeling (as in the old days) that anything that wasn't in Fagge, Briscoe, and Gray simply could not be true, he was overwhelmed with text-books and advisers; though better scientifically he had not half such a good time. Sir Arthur Stanley, having recalled the services of Dr. Wainwright's father as his predecessor in the treasurer's office, reported that the reconstruction of the out-patients' department is proceeding according to plan. By August of next year it should be fully open, and thanks to the workings of compound interest, and conversion of war loan, on an unused legacy it would be opened without incurring fresh debt. The reconditioning of all the wards was also in progress, and only two blocks had still to be done. Unfortunately £3000–£4000 would have to be spent—it seemed like waste—on the stonework of the roof, some of which was in a dangerous condition. Within the last few days, however, the attention of the authorities had turned, or rather *been* turned, to the more interesting claims of College House (loud cheers), where the accommodation that had been ample for 16 or 17 residents was evidently insufficient for 31. The site was limited but it had been decided to do what was possible. Prof. L. S. Dudgeon, as dean of the medical school, thought it very fortunate that economy had prevented the building of a new school across the road, at a cost of about a million; the result had been the remarkable scheme of improvement on the present site. After speaking of the losses St. Thomas's had sustained during the year by the deaths of Sir George Makins, Dr. J. L. Birley, and Dr. L. W. Shelley, he referred to changes in the present staff. Prof. Le Gros Clark had moved to the chair of anatomy at Oxford, where the regius professor of medicine, the Waynflete professor of physiology, and the professor of anatomy would all be St. Thomas's men. His place had been taken by Dr. A. B. Appleton, while Dr. Reginald Hilton and Dr. H. K. Goadby had become assistant physicians, and Dr. A. J. Wrigley assistant obstetric physician. In athletics the school had not done particularly well—not that that he thought it mattered. They had won the rowing, the tennis, and the hockey; but he for his part thought it would be an excellent thing if cup-ties were henceforth abolished. The liaison with Lambeth Hospital was proving fruitful, and useful arrangements had been made for receiving maternity students, two at a time for a fortnight, at Balham Hospital. By far the greatest event in London for many years, however, was the new coöperation between Bart.'s, Guy's, and St. Thomas's, and in proposing the guests he coupled the toast with the names of Mr. W. Girling Ball and Mr. W. M. Mollison, deans of the sister schools. Mr. Girling Ball, in reply, said the coöperation was not yet complete, and said the situation reminded him of the man who gave a swimming bath to a lunatic asylum and later visited the superintendent. "Yes," said the superintendent, "they are getting on splendidly—diving off the high board, diving off the low board. Heaven knows what will happen when they get the water in!" Sir Cuthbert Wallace, recalling memories of the chairman at various stages of his career, expressed a doubt whether the consultant and specialist branch of the profession really had any effect in forming the public's opinion of what doctors are really like. It was to the general practitioner that people turned when in trouble, and with men like Wainwright might safely be left the reputation of the profession and of St. Thomas's.

St. Mary's Hospital

The annual dinner of past and present students was this year held for the first time in the library of the new medical school. Dr. P. Montague Smith presided over a gathering of about 120 people. Mr. Duncan Fitzwilliams, senior surgeon to the hospital, proposing the health of the chairman in his usual genial manner, congratulated the hospital and the dean on the enterprise which had procured for the school a new building, and on the fact that for the first time the dinner could be held actually in the school. He gave an amusing account of the chairman's early days, and of his adventures in obtaining his M.D. and F.R.C.S., and mentioned his activities both at the Princess Louise Hospital, where he seemed to fill every important position, in Masonry, and at the Harveian Society. Few, he said, were as wise as the chairman looked. Dr. Montague Smith, replying, welcomed the vice-chancellor of London University, and spoke of some of the distinguished past students of St. Mary's. He congratulated the hospital on having raised nearly £100,000 for enlargement of its buildings and for the new nurses' home, and stated that already 100 more beds were provided than there were ten years ago. All the money subscribed was given in trust for those working in the hospital, the school, and the inoculation department; and the three must work as one and realise their wide responsibilities. Dr. C. M. Wilson, the dean, replying to the toast of the medical school

proposed by the chairman, said that the visit of the King had been the great event of the year, but the building he had opened was only the means to an end. This end was to get the best men and to turn out the best students. He had been forced now to turn away one of every three applicants, and the students entering were of a fine type. The school had won both the first and "A" cups at both Rugby football and cricket—a feat which no hospital had ever achieved before.

King's College Hospital

The annual dinner of past and present students was held at the Connaught Rooms on Sept. 29th, with Dr. Wilfrid Attenborough, of Farnborough, Hants, in the chair, and was attended by well over 100 members of the school. The toast of the hospital and medical school was proposed by the chairman, who said that although himself a student at the old hospital in Lincoln's Inn he had kept in continuous touch with the new hospital at Denmark Hill. He referred with regret to the departure under the age limit of their senior surgeon, Mr. Arthur Edmunds, whose first house surgeon he had been, and to the great service he had given to the hospital. He spoke also, with appreciation, of the heavy pioneer work of organising the nursing service of the new hospital which had fallen to the former sister matron, Miss M. E. Ray, R.R.C., whose death had taken place recently. In the near future a new building for private patients would be erected as well as the remainder of the nurses' quarters.

In the medical school the past year has been one of consolidation, but a fair amount of new construction had still to be done. Over £40,000 had already been paid out and, owing largely to the fine efforts of the dean emeritus, Dr. Willoughby Lyle, so far it had not been necessary to borrow any money. From the academic standpoint the past year had been a successful one; a member of the medical school had obtained the Murchison scholarship for clinical medicine, awarded alternately after a competitive examination by the University of Edinburgh and by the Royal College of Physicians of London. Since 1922 this scholarship had been awarded to King's College Hospital men on six occasions out of a possible seven, when it had been available for members of the London medical schools. The number of students had steadily increased. In 1915 the total number in every stage of the curriculum was 55 and to-day the corresponding number was 383. The dean, Dr. J. A. Drake, in response to the toast, welcomed the guests of the evening who included Mr. W. R. Halliday, principal of King's College, and Prof. D. M. Blair, dean of the medical faculty of King's College, and thanked the college authorities for the very friendly way in which the numerous questions relating to students at the college and hospital had been approached.

St. George's Hospital

The school dinner at Claridge's on Sept. 29th was in effect a farewell to its chairman, Mr. W. Fedde Fedden, who is shortly retiring from the surgical staff. His colleague and opposite member on the medical side, Dr. J. A. Torrens, spoke of him in proposing his health as a man of exceptional single-mindedness who had practised surgery for the sake of surgery, and this verdict was endorsed by the ovation when he rose to reply. It was, said Mr. Fedden, 39 years that day since he entered St. George's, which was then a complete medical school, taking all the pre-medical subjects. Manners were strangely different. As a resident he was reproached for smoking a cigarette on the steps of the hospital, and it was good form to attend an inquest in a top hat and frock coat. There was of course no electric light, each R.M.O. being allowed two candles; X rays were just coming in, the apparatus being wheeled from one ward to another and used only for fractures. Laparotomy was rare, and it was the rule to do an abdominal section only after all the surgeons had been called in consultation. Perineal section was common, but he saw only four operations for appendicitis during six months' residence. Slater was then doing pioneer work in bacteriology, and Rolleston morbid histology in a minute room off the museum. In the theatre there was no steriliser for dressings or towels and no gloves were worn. The throat department, which arose from the needs of operatic singers, was under the care of a physician. From the past Mr. Fedden turned with some anxiety to the future. The working parts of the hospital are, he said, wearing out; it must be rebuilt either in situ or elsewhere. The theatres are so obsolete that in a few more years they might be taken bodily away to a historical museum. If building and equipment could be financed, whence was to come the money for maintenance? The voluntary principle, he said, is dying and the time drawing near when some form of aid, State or municipal, would be required. He spoke of the vast clinical material at L.C.C. hospitals and of the need to coöperate with them. Contributory schemes were to be encouraged if some proportion of the fees were allotted to medical attention. Finally, the hospital must have private paying wards or it would be left behind. But when all was said and done, St. George's students were well-picked men of the right type, they turned out the right stuff, and the relations between staff and students were always good. The other toast of the evening, that of the hospital and medical school, was proposed by Sir Stanley Jackson, a member of the house committee, who described himself pathetically as the only layman present. The rapid advance of medical knowledge had, he said, upset the calculations of all the older London hospitals. If it was decided to bring any one of them entirely up to date it would almost mean demolition and complete reconstruction, but the voluntary system still had a wide appeal to the public, and there was much inspiration in a great tradition. In reply the dean of the medical school, Dr. A. Feiling, took encouragement from the remarkable record of King Edward's Hospital Fund last year, and from an entry of students more than satisfactory for so small a school. He spoke of regular clinical demonstrations at St. Mary Abbot's Hospital which had now become a formal affiliation. He asked for wider publicity to be given to Dr. Slater's munificent gift of £10,000 to be spent on laboratories when the hospital was rebuilt. Mr. Ashton Miller, who also replied, said it was the unanimous hope of the junior members of the school that the present site of the hospital would be retained.

Middlesex Hospital

This has been a great year in the history of the Middlesex Hospital, said Dr. E. A. Cockayne, presiding at the Savoy Hotel on Monday last. When he heard that the old building was doomed he had scarcely thought to live to see another; but now the final contracts had been signed, and only £80,000 or so was needed to complete it for the hospital's centenary next year. The Woolavington wing for paying patients had been opened in January; thanks to Mr. Meyerstein's gift of £100,000 a department of X ray therapy, second to none, would be the complement of the department of radiodiagnosis already provided by Mr. Collins; and Mr. S. A. Courtauld had crowned a long list of benefactions by giving £15,000 to fit up a unit of clinical research. This was a new department in clinical practice, long desired by the Medical Research Council, and it would bring the professors of biochemistry and pathology into closest touch with the clinical staff. A new clinical theatre would be opened early next year, the X ray diagnosis department in February or March, and the X ray treatment department by July. His successor in the chair should be able to announce the completion of the work. Mr. Courtauld, chairman of the council of the medical school, spoke of the amenities of the Woolavington wing, and said he thought the clinical unit would be open by Christmas. Dr. H. E. A. Boldero, the dean, described the sorrow he had brought to the homes of would-be Middlesex students who had been turned away. The new clinical research unit, he said, would contain six smallish wards, each with room for one, two, or possibly three patients, and Prof. E. C. Dodds and Prof. Samson Wright would have a share in their disposal. The clinical lecture theatre, holding up to 100, would be useful, among other things, for post-graduate courses; last week's course was attended by 50 old students, and

such was the enthusiasm that one man arrived seven days early. Dr. Boldero was full of optimism for the new year, both academic and athletic. Dr. P. H. Newman, as Broderip scholar, was understood to strike the discordant note of complaint proper to his office, while Mr. A. E. Webb-Johnson, after rebuking him, was equally appropriate in his management of a long list of guests, including Surgeon Vice-Admiral Sir Robert Hill, Lieut.-General J. A. Hartigan, Major-General J. W. West, and other representatives of the Services; the vice-chancellor and other officers of London University; the mayors of Marylebone and St. Pancras; Dr. C. D. S. Agassiz, of St. Mary Abbot's, and Dr. James Carver, of Archway Hospital; and the regius professors of medicine at Oxford and Cambridge. Sir Farquhar Buzzard said that before going out to dinner he always read the Warning Notice of the General Medical Council; but he was taking the risk of associating himself with unqualified persons in returning thanks for a happy evening. Dr. R. A. Young, proposing the chairman, attributed Dr. Cockayne's twin enthusiasms for pædiatrics and lepidopterology to early reading of Chavasse's "Advice to a Mother."

Westminster Hospital

There was an unusually large gathering at this year's dinner, held at the Trocadero on Sept. 29th, because many old students came to do honour to Mr. William Turner on his retirement from the active staff. It was Mr. Turner's evening, and almost every speaker, whatever the toast, found himself expressing respect and affection for the hospital's senior surgeon. Mr. G. T. Mullally, the first to do so, also referred in warm terms to the "man who regenerated the school after the damage done by the war" (Sir Stanley Woodwark), now succeeded by Dr. Adolphe Abrahams as dean. Speaking of the changes impending in the structure of the hospital itself, Mr. Mullally felt confident that, whatever these changes might finally be, the new building would be the very last word in hospital construction. Colonel H. S. Hingston, I.M.S. said that even in the days when he joined the Westminster there were rumours of its removal; but it did not happen then and it had not happened yet. When Colonel Hingston sat at his feet, Mr. Turner was considered rather a faddist; he insisted on the use of gloves in the operating theatre. But anyone who had dressed for him must always remember the kindliness and sympathy, and perhaps best of all the courtesy, Mr. Turner showed to patients, sisters, and students—a great example to the young. Mr. J. B. Neal spoke in the same sense for the present students, and Sir Stanley Woodwark even contrived to get similar sentiments into his toast of the guests. After Sir Harry Hague had replied on their behalf, Mr. Arthur Evans came belatedly to the health of the evening—namely, the chairman; yet had no difficulty in finding fresh reasons for praising "this fine first-class honest surgeon"—a man who, when asked to go a mile, was always willing to go twain. Mr. Turner, in reply, said that in the length of time he had served on the staff (37 years) he came fifth in the hospital records; one man had served 53. The last 30 years, however, had been remarkable both in the history of the country and of the hospital. There were two things he had wished to do before leaving: one was to establish a proper club for the students with a refectory where they could meet members of the staff every day in social contact. That was going to be done. The other was to see an amalgamation with a sister hospital; for there was all the difference in efficiency between 350 beds and 700. This now seemed to be a lost cause, and the plans were already out for the nurses' home and medical school on the new site. If these were approved the nurses' home would go straight on, and a beginning was also to be made with the medical school if money could be found. In conclusion Mr. Turner spoke of his continuing work in private practice and of his friendly association with Mr. Evans and Mr. Rock Carling in a team which had always worked with unanimity and concord. The speeches ended with a vote of thanks to the secretaries, amusingly proposed by Dr. Abrahams, and an equally witty reply from Mr. Aubrey Goodwin.

University of London Medical Graduates Society

The autumn extra-metropolitan dinner took place on Sept. 28th at Queen's College, Cambridge. Mr. W. McAdam Eccles, the president, announced that the society, which was founded in 1928, now had 548 members, of whom 54 resided overseas. In reply to the toast of the guests, Sir Gowland Hopkins, P.R.S., said he believed that the day had gone when the laboratory worker was not considered a colleague of the clinician, for control experiments could but rarely be carried out in the ward, and the laboratory, where they could, was thus of real value. Mr. Eccles, in proposing the health of the president of Queen's and Mrs. Venn, mentioned the very long association of the Venn family with Cambridge and its colleges. Mr. Venn, in reply, said the time was passing when an individual college would be distinguished by one faculty over others, and that Queen's had now its share of medical undergraduates.

Communications relating to the society should be addressed to its hon. secretaries at 11, Chandos-street, London, W.1.

Chartered Society of Massage and Medical Gymnastics

The annual dinner of this society is always a pleasant function, at which the cordial relations between members of the society and the medical profession are manifest. This year the meeting place was the Café Royal, where, on Sept. 26th, Mr. R. C. Elmslie presided over a large gathering which included many distinguished doctors as official and private guests. Dr. A. H. Douthwaite, proposing the toast of the society, recalled its modest beginnings; the therapeutic possibilities of massage and medical gymnastics were not generally realised until the war, when surgeons and later the public began to appreciate them. In 1920 the Chartered Society was formed with a membership of 3000, which had now risen to 9000. If during the last few years the market had appeared to be overstocked it was because the medical profession had been slow to recognise and reward the loyalty of a society whose members are pledged to accept as patients only those referred by a doctor. The slump was, however, now over, and with Mr. Elmslie as leader the society might well look forward to a prosperous future for itself and its individual members. Mr. Elmslie, in reply, endorsed the view that medical practitioners all over the country were now using and appreciating the services of members of the society working in their districts. The progress of the proposed official register of workers ancillary to medicine had for the moment been held up by the reluctance of the Board of Trade to grant the necessary facilities. The society itself had prospered; during the year it had increased the size and democratic constitution of its council, and had secured exemption for its members from certain local licensing regulations and from inspection by lay authorities. Two additional examinations had been instituted (1) in medical hydrology and (2) in electrical treatment for blind candidates. Dr. F. W. W. Griffin had been appointed editor of the society's journal. The toast of the guests was proposed with grace by Miss S. Grafton, C.S.M.M.G. Sir Holburt Waring in his response hoped that future legislation would prevent treatment of patients, except under supervision, by those who had not been educated in the art of diagnosis. Mrs. Gilmore Reid, member of the Australasian Massage Association, conveyed greetings from her colleagues, and spoke of the need for reciprocal recognition between members of accredited societies in different parts of the Empire. The toast of the chairman, proposed by Miss H. S. Angove, C.S.M.M.G., was received with musical honours, and the company adjourned to dance in cheerful mood.

Beit Memorial Fellowships

Lord Macmillan has been appointed a trustee of the Beit memorial fellowships for medical research, in succession to the late Sir James Kingston Fowler, M.D. The other trustees are Sir Alfred Beit, Mr. W. Ormsby-Gore, M.P., Lord Onslow, Lord Rayleigh, F.R.S., Mr. Edwin Deller, LL.D., and Sir John Rose Bradford, F.R.S.

University of Oxford

An election will be made to the Staines medical research fellowship in the course of the Michaelmas term. The fellowship, which is tenable for a maximum period of five years, has an annual stipend of £400, and is offered for research in one of the medical sciences in Oxford. Applications should be sent to the rector of Exeter College before Nov. 1st.

University of Leeds

At recent examinations the following candidates were successful:—

M.B., CH.B.

Part I.—T. K. Cooke, F. A. Crosfill, M. A. Kader, C. V. Light, O. Scarborough, F. A. Shackleton, Helene E. Sykes, J. D. F. Thornton, and H. L. L. Wilson.

Part II.—F. B. Coates, G. M. Davies, R. S. Illingworth, B. Jackson, K. I. Johnstone, G. J. Kearney, E. Lodge, L. Rabinovitch, J. T. Rhodes, H. R. Rollin, and L. A. Westwood.

Part III.—K. I. Johnstone (with second-class honours), F. B. Coates, G. M. Davies, R. S. Illingworth, B. Jackson, G. J. Kearney, E. Lodge, J. T. Rhodes, L. A. Westwood, and W. Zemsky.

L.D.S.

A. Cromack, S. R. Fell, D. N. Hirst, M. Jackson, and A. G. Oliver.

D.P.M.

A. J. Bain, H. Burt, and J. M. Frew.

D.P.H.

J. Fielding, G. P. Holderness, and J. Q. Mountain.

Manchester Medical Society

This society, which is celebrating its centenary, has arranged an exhibition at the new central library, illustrating the history of medicine in Manchester. It will be open till Oct. 20th. For his address to the centenary meeting (followed by the centenary dinner) on Wednesday last, Dr. Bosdin Leech, the president, chose the title Some Picturesque Episodes of Manchester Medical History. A centenary service will be held next Sunday at 3.30 P.M. in Manchester Cathedral with the Bishop of Middleton as preacher.

South-West London Medical Society

This society, under the presidency of Dr. W. J. Morriah, holds its annual dinner on Oct. 10th and its first meeting on Oct. 17th, when Dr. Russell Reynolds will give an address on cineradiography. On Nov. 14th there will be a lecture by Dr. L. J. Witts on the diagnosis and treatment of anæmia, and on Dec. 12th Dr. Z. Mennell and Dr. M. D. Nosworthy will open a discussion entitled Ether is Not Dead. Other speakers will include Dr. Donald Paterson, Dr. W. E. Lloyd, Dr. G. E. S. Ward, and Mr. Terence Millin. The Bolingbroke lecture will be given on June 12th by Dr. Robert Hutchison, whose subject will be Constitutional Medicine. The meetings are held at the Bolingbroke Hospital, Wandsworth Common, at 9 P.M., and the honorary secretaries are Dr. E. G. Housden, 51, Longley-road, S.W. 17, and Dr. A. W. Wells.

Fellowship of Medicine and Post-Graduate Medical Association

Dr. A. E. Clark-Kennedy will speak at the Medical Society of London, Chandos-street, Cavendish-square, W., at 2.30 P.M. on Oct. 9th on ataxia, and on Oct. 16th on giddiness. Courses of instruction include a week-end course at the Royal Chest Hospital, City-road (Oct. 13th and 14th); an all-day course on medicine and surgery at the Metropolitan General Hospital, Kingsland-road (Oct. 8th to 20th); an all-day course on cardiology at the National Hospital for Diseases of the Heart (Oct. 8th to 20th); an afternoon course on ophthalmology at the Royal Westminster Ophthalmic Hospital (Oct. 15th to Nov. 3rd); an all-day course on gynæcology at the Chelsea Hospital for Women (Oct. 22nd to Nov. 3rd); an all-day course on neurology at the West End Hospital for Nervous Diseases (Oct. 29th to Nov. 3rd); a week-end course on clinical surgery at the Royal Albert Dock Hospital (Oct. 20th and 21st); and another on chest disease at the Hospital for Consumption, Brompton (Oct. 27th and 28th). Courses of instruction are open only to members and associates, and further particulars may be had from the secretary of the Fellowship at 1, Wimpole-street, W. 1.

A New Standard of Housing

Speaking at Plymouth on Monday last, Sir Hilton Young said that under the new Housing Bill local authorities would be asked to find out the actual need for houses to remedy overcrowding and to provide whatever number of houses should be thus found to be required. The Government was, he said, setting a standard which would provide for the separation of the sexes over 10 years of age, and space for the increasing family. Housing authorities would be asked to accept responsibility for providing the additional accommodation at appropriate rents, financial help to be given if they could not do without it. After a fixed date it would become an offence for either landlord or occupier to overcrowd a house in excess of the legal standard of accommodation; but until a reasonable offer of additional accommodation had been made it would be a defence that the overcrowding preceded the date fixed in the Act.

Ultra-violet Irradiation for Nurses

It is announced that at Middlesbrough municipal hospital nurses on night duty receive artificial sunlight treatment.

Sir Alfred Fripp Memorial Fellowship

This fellowship has been established with the object of promoting the advancement of knowledge and research in psychology through the study of children in health and in disease. It is of the annual value of £300 and is tenable for two years. Further particulars may be had from the dean of Guy's Hospital medical school, S.E.1, who should receive applications not later than Oct. 22nd.

Post-graduate Work in Newcastle

The winter session of post-graduate work under the auspices of the University of Durham College of Medicine, Newcastle-on-Tyne, opens on Sunday Oct. 7th. The general course consists of classes on Thursdays from 1.30 to 5.30 P.M. onwards, starting on Oct. 11th, at the Royal Victoria Infirmary. There will also be a special course in midwifery and gynæcology on Wednesdays from 3 P.M. Classes for clinical instruction in medicine and surgery are held at the Newcastle General Hospital every Sunday from 10.30 A.M. Applications for participation in the general course should be made at once to the registrar of the College of Medicine.

British Hospitals Contributory Schemes Association

The third annual conference of this association was held recently at Bristol under the chairmanship of Colonel B. J. T. Ford, the president. It was reported that 94 schemes are now affiliated to the association, and that the number of contributors is approximately 4,000,000. A provisional agreement with the Treasury was adopted under which any civil servant employed in the district served by an affiliated scheme who is already, or may later become, a member of that scheme, will be given an opportunity of having his contribution deducted from his salary; the arrangement also provides for the continuance of the deductions after retirement. In a paper on the work of the Health Section of the League of Nations Dr. Melville McKenzie, medical officer of that section, suggested the possibility of the English contributory schemes developing into an international scheme—beginnings have been made in various parts of the world. In the discussion upon a paper on municipal hospitals in relation to contributory schemes prepared by Sir Arthur Atkinson, chairman of the Hull voluntary hospitals council, read in his absence, Dr. Peter McDonald said that, generally speaking, the municipal hospital is not as efficient as the voluntary hospital, though there are exceptions. The supply of hospital beds, he declared, is inadequate, and will become more so when people have been trained in the hospital habit. He thought the municipalities would be encouraged to supply the lack if they could look for payment towards maintenance from contributory schemes. It was promised that the executive of the association would draw up a model contributory scheme as a basis upon which local committees may work.

Post-graduate Lectures at Hampstead

The fifth winter session of post-graduate lectures at the Hampstead General and North-West London Hospital opens on Wednesday, Oct. 17th, at 3 P.M., with an address on Patient and Doctor, by Sir Henry Brackenbury. Further lectures will be given at 4 P.M. on Wednesdays, from Oct. 24th to Dec. 12th, and their titles will appear each week in our Medical Diary.

Technical Aspects of Emulsions

A symposium on this subject, organised by the British section of the International Society of Leather Trades' Chemists, will be held at the Royal Society of Arts, John-street, Adelphi, London, W.C., on Friday, Dec. 7th, from 10 A.M. to 6 P.M., with Prof. F. G. Donnan, F.R.S., in the chair. The organising secretary may be addressed at 17, Market-street, S.E.1.

Medical Diary

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.
MONDAY, Oct. 8th.
United Services. 4.30 P.M. Major-General P. H. Henderson: Some Milestones of Achievement in Army Hygiene. (Presidental address.)
TUESDAY.
Therapeutics and Pharmacology. 5 P.M. Prof. J. H. Burn: The Control of the Blood Pressure. (Presidental address.)
FRIDAY.
Clinical. 5.30 P.M. (Cases at 4.30 P.M.) Dr. R. W. B. Ellis (for Dr. E. A. Cockayne): 1. Collapse Bronchiectasis in a Child aged 5½. Dr. S. Gilbert Scott: 2. Spondylitis Adolescens Treated three years ago by Wide Field X ray Therapy of Low Intensity. Dr. Courtenay Evans: 3. Aortic Disease of Unusual Evolution.
Ophthalmology. 8.30 P.M. (Cases at 8 P.M.) Mr. Ransom Pickard: The Causation of Herpes Ophthalmicus. (Presidental address.)

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, W.
MONDAY, Oct. 8th.—8.30 P.M., Lord Horder: Medicine and Morals. (Presidential Address.)

PADDINGTON MEDICAL SOCIETY.
TUESDAY, Oct. 9th.—9 P.M. (Great Western Royal Hotel, Paddington, W.), Prof. F. Langmead: Significance of High Blood Pressure.

BIOCHEMICAL SOCIETY.
SATURDAY, Oct. 13th.—2.30 P.M. (Biochemical Laboratory, Cambridge), Short Communications.

MEDICAL SOCIETY OF INDIVIDUAL PSYCHOLOGY.
THURSDAY, Oct. 11th.—8.30 P.M. (11, Chandos-street, W.), an Address by the Chairman, Dr. J. C. Young.

ROYAL SANITARY INSTITUTE.
FRIDAY, Oct. 12th.—5 P.M. (Town Hall, Sunderland), Dr. A. Stuart Hebblethwaite: Vermin and Slum Clearance. Dr. H. A. Cookson: Anæmias and Preventive Medicine.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS, Lincoln's Inn-fields, W.C.
WEDNESDAY, Oct. 10th, and THURSDAY.—5 P.M., Dr. Arthur Baldwin Duel: Operative Treatment of Facial Palsy.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, London, W.
MONDAY, Oct. 8th, to SATURDAY, Oct. 13th.—MEDICAL SOCIETY OF LONDON, Chandos-street, Cavendish-square, W., at 2.30 P.M. on Tues., Oct. 9th, Dr. A. E. Clark-Kennedy: Ataxia.—METROPOLITAN GENERAL HOSPITAL, Kingsland-road, E. All-day course in medicine and surgery.—QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road. All-day course in diseases of children.—ST. JOHN CLINIC AND INSTITUTE OF PHYSICAL MEDICINE, Ranelagh-road, S.W. Course in physical medicine daily at 8 P.M.—ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C. Course in dermatology in the afternoons and evenings. Lectures at 5 P.M.—NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland-street, W. All-day course in cardiology.—ROYAL CHEST HOSPITAL, City-road, E.C. Week-end course in diseases of the heart and lungs on Oct. 13th and 14th. (Courses of instruction are open only to members and associates of the Fellowship.)

UNIVERSITY COLLEGE HOSPITAL POST-GRADUATE DEMONSTRATIONS.
THURSDAY, Oct. 11th.—10 A.M., Dr. C. Bolton: Hæmatemesis. 11 A.M., Prof. T. R. Elliott: Demonstration of cases. Mr. N. L. White: Practical Details of Radium in Gynæcology. Noon, Mr. E. K. Martin: Surgical Treatment of Gastric and Duodenal Hæmorrhage. Mr. H. Kisch: Demonstration of cases and New Method of Treatment (at Out-patient Department, Royal Ear Hospital). 2.30 P.M., Dr. H. P. Himsworth: The Control of Diabetic Treatment. 3.30 P.M., Dr. F. M. R. Walshe: Epileptiform Fits and Their Treatment. Dr. R. W. A. Salmond: Treatment of the Leukæmias by X Rays.
FRIDAY.—10 A.M., Dr. A. M. H. Gray: Clinical Demonstrations. Dr. J. W. McNee: Differential Diagnosis in Jaundice. 10.30 A.M., Mr. F. W. Watkyn Thomas: Some Recent Work on Deafness. 11.30 A.M., Mr. C. W. Flemming: Foot-strain. Mr. F. J. F. Barrington: Hæmaturia. 12.15 P.M., Mr. C. Dee Shapland: Recent Developments in the Surgical Treatment of Detachment of the Retina. 1.30 P.M., Mr. A. J. Gardham: Demonstration of Radium Cases. 2.30 P.M., Mr. Julian Taylor: Head Injuries. 2.30 P.M., Mr. Myles Formby: Ear, Nose, and Throat Problems commonly met with in General Practice (at the Royal Ear Hospital). 3.30 P.M., Dr. E. A. Blake Pritchard: Effect of Injuries on the Development of Diseases of the Nervous System. (These demonstrations are open only to former students of the Hospital.)

WEST LONDON HOSPITAL POST-GRADUATE COLLEGE, Hammersmith, W.
MONDAY, Oct. 8th.—10 A.M., medical wards, skin clinic 2 P.M., surgical and gynæcological wards, medical, surgical, eye, and gynæcological clinics. 4.15 P.M., Mr. Green-Armytage: Gonorrhœa in the Female.
TUESDAY.—10 A.M., medical wards. 11 A.M., surgical wards. 2 P.M., medical, surgical, and throat clinics, operations. 4.15 P.M., Lecture; Dr. Konstam: Diseases of the Spleen.
WEDNESDAY.—10 A.M., children's ward and clinic. 2 P.M., medical wards, medical, surgical, and eye clinics. gynæcological operations.
THURSDAY.—10 A.M., neurological and gynæcological clinics. 11.30 A.M., fracture demonstration. 2 P.M., medical, surgical, eye, and genito-urinary clinics, operations.
FRIDAY.—10 A.M., skin clinic. Noon, lecture on treatment. 2 P.M., medical, surgical, and throat clinics, operations.
SATURDAY.—10 A.M., medical and surgical wards, surgical and children's clinics.
The lectures at 4.15 P.M. are open to all medical practitioners without fee.

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL, Denmark-hill, S.E.
THURSDAY, Oct. 11th.—9 P.M., Mr. C. P. G. Wakeley: Tumours of the Breast and their Treatment.

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C.
MONDAY, Oct. 8th–13th., Intensive course in Laryngology Rhinology, and Otology (second week).
FRIDAY.—4 P.M., Mr. Douglas Harmer: Treatment of Malignant Disease in the Upper Jaw. (Annual address.)

NATIONAL HOSPITAL, Queen-square, W.C.
MONDAY, Oct. 8th.—3.30 P.M., Dr. Carmichael: Physiology of the Cerebro-spinal Fluid.
TUESDAY.—3.30 P.M., Dr. Denny-Brown: The Physiology of Muscle.
WEDNESDAY.—3.30 P.M., Dr. Collier: Clinical Demonstration.
THURSDAY.—3.30 P.M., Dr. Denny-Brown: The Physiology of Nerve Fibre.
FRIDAY.—3.30 P.M., Dr. Bernard Hart: The Psychoneuroses. Out-patient clinic each day at 2 P.M.

LONDON SCHOOL OF DERMATOLOGY, 49, Leicester-square, W.C.
TUESDAY, Oct. 9th.—5 P.M., Dr. M. Sydney Thomson: Animal Diseases Communicable to Man.
WEDNESDAY.—5 P.M., Dr. I. Muende: Introduction to Histopathology of the Skin. (Chesterfield lectures.)

GRESHAM COLLEGE, Basinghall-street, E.C.
TUESDAY, Oct. 9th–12th.—Daily at 6 P.M., Dr. J. Alison Glover: Rheumatic Diseases.

ROYAL INSTITUTE OF PUBLIC HEALTH, 23, Queen-square, W.C.
MONDAY, Oct. 8th, TUESDAY and WEDNESDAY.—4 P.M., Prof. W. J. Tulloch: Diagnosis of Small-pox and the Investigation of Vaccinia by Laboratory Methods. (Harben lectures.)

INSTITUTE OF HYGIENE, 28, Portland-place, W.
WEDNESDAY, Oct. 10th.—3.30 P.M., Sir Pendrill Varrier-Jones: Economics of the Tuberculosis Problem.

MANCHESTER ROYAL INFIRMARY.
TUESDAY, Oct. 9th.—4.15 P.M., Dr. T. H. Oliver: Practica Points in Diabetes.
FRIDAY.—4.15 P.M., Dr. F. R. Ferguson: Demonstration o Medical Cases.

Appointments

BROOMHEAD, R., M.B. Leeds, F.R.C.S. Eng., has been appointed Honorary Orthopædic Surgeon to the General Infirmary, Leeds.

D'ABREU, FRANK, M.B. Birm., F.R.C.S. Eng., Registrar to the Cancer Department of St. Bartholomew's Hospital.

OGLE, W. L., M.R.C.S. Eng., Assistant Resident Medical Officer to the City of London Maternity Hospital.

POTTER, A. LLOYD, M.D. Liverp., M.C.O.G., Honorary Assistant Surgeon at the Royal Albert Edward Infirmary, Wigan.

SPENCER, JOHN, M.R.C.S. Eng., D.P.H., Pathologist to the King George Hospital, Ilford.

WILLAN, R. J., M.V.O., O.B.E., F.R.C.S. Eng., Lecturer in Surgery in the University of Durham College of Medicine.
WILSON, D. S. P., M.B. Dub., F.R.C.S. Eng., Honorary Assistant Surgeon to the Salford Royal Hospital.

North Riding Infirmary, Middlesbrough.—The following appointments are announced:—
DICKSON, D. C., M.B. St. And., F.R.C.S. Edin., Honorary Surgeon; and
CLARK, J. C., M.B., F.R.C.S. Edin., Assistant Honorary Surgeon.

The Queen's Hospital, Birmingham.—The following appointments are announced:—
BARNIE-ADSHEAD W. E., F.R.C.S. Eng., honorary obstetrical and Gynæcological Surgeon;
HEATHER, J. C., M.D., M.R.C.P., Resident Medical Registrar;
LEWIS, E. E., F.R.C.S. Eng., Resident Surgical Officer; and
HARDMAN, JAMES, M.B. Birm., Resident Surgical Registrar.

Sheffield Royal Hospital.—The following appointments are announced:—
SIMPSON, GRAHAM, F.R.C.S. Eng., and WILSON, A. GARRICK, M.C., F.R.C.S. Eng., Honorary Consulting Surgeons;
WILSON, J. B. FERGUSON, M.S. Lond., F.R.C.S. Eng., and YATES, H. BLACOW, F.R.C.S. Eng., Honorary Surgeons;
ANDERSON, J. C., F.R.C.S. Eng., Honorary Assistant Surgeon; and
HYNES, W., M.B. Leeds, F.R.C.S. Eng., Surgical Registrar.

West London Hospital.—The following appointments are announced:—
WALTON, W. F., M.R.C.S. Eng., House Physician;
REID, R. G., M.B. Lond., House Surgeon; and
THOMAS, M. J. H., M.R.C.S. Eng., House Surgeon to Ear, Nose, and Throat Department.

London County Council Hospital Staff.—The following appointments, promotions, and transfers are announced. A.M.O.(I.) and (II.)=Assistant Medical Officer, Grades I. and II.
WHITTINGHAM, E. B., M.B. Liverp., F.R.C.S. Eng., D.P.H., A.M.O. (I.), St. Alfege's.
O'REILLY, T. J., M.D. Dub., A.M.O. (I.), Mile End.
RITCHIE, T. H. W., M.D. Belf., A.M.O. (I.), Queen Mary's Hospital for Children.
GALLEN, A. F. A., M.B. Glasg., A.M.O.(I.), Colindale.
PENRY, J., M.R.C.S. Eng., A.M.O. (II.), St. Charles'.
KAHAN, A., M.B. Lond., A.M.O. (II.), St. Leonard's.
MOWLEM, A. R., M.B. N.Z., F.R.C.S. Eng., A.M.O. (I.), St. James'.
BREEN, G. E., M.D. N.U.I., D.O.M.S., A.M.O. (I.), Brook.

Certifying Surgeons under the Factory and Workshop Acts: Dr. P. MCDIARMID (Fochabers District, Morayshire), and Dr. A. LEIGH (Chester District, Cheshire).

Vacancies

For further information refer to the advertisement columns.

Aberdeen County, Public Health Department.—Asst. M.O.H. £500.
Albert Dock Hospital, Connaught-road, E.—Res. M.O. At rate of £110.
Altrincham General Hospital.—Sen. and Jun. H.S.'s. At rate of £150 and £120 respectively.
Bath and Wessex Children's Orthopædic Hospital, Combe Park.—Hon. Visiting Surgeon. Also Res. Asst. Surgeon. £350.
Belgrave Hospital for Children, Clapham-road, S.W.—H.P., and H.S. Each at rate of £100.
Birmingham, Queen's Hospital.—Asst. Obstet. Surgeon. Also Physician to Out-patients. Each £50.
Brighton, Sanatorium and Infectious Disease Hospital.—Jun. Res. M.O. At rate of £250.
Bristol General Hospital.—Hon. Physician.
Bristol Royal Infirmary.—Hon. Surgeon. Also Hon. Asst. Surgeon.
Burnley Municipal General Hospital.—Jun. Res. M.O. £150.
Cambridge, Addenbrooke's Hospital.—Res. Anæsthetist and Cas. O. Also H.S. to Spec. Depts. Each at rate of £130.
Cancer Hospital, Fulham-road, S.W.—Asst. Radium Officer. £350.
Cheltenham General and Eye Hospitals.—H.S. £300.
Chester Royal Infirmary.—H.S. £150.
Children's Hospital, Hampstead, N.W.—Res. M.O. At rate of £150.
City of London Hospital for Diseases of Heart and Lungs, Victoria Park, E.—H.P. At rate of £100.
Coventry and Warwickshire Hospital.—Res. H.S. £125.
Dewsbury and District General Infirmary.—H.S. £150.
Eastbourne, Princess Alice Hospital.—Res. H.S. £150.
Eastbourne, Royal Eye Hospital, Pevensey-road.—H.S. £100.
Guildford, Royal Surrey County Hospital.—H.S. At rate of £150.
Guy's Hospital, S.E.—Demonstrator in Anæsthetics. £50.
Hampstead General and North-West London Hospital, Haverstock-hill, N.W.—H.S. At rate of £100.
Hertford County Hospital.—Hon. Asst. Physician.
Ilford Borough.—Asst. School Dental Surgeon. £450.
Infants Hospital, Vincent-square, Westminster.—H.P. £75.
King Edward Memorial Hospital, Ealing.—Jun. Res. M.O. At rate of £150.
King's College Hospital, Denmark Hill, S.E.—Jun. Surg.
Lancaster Royal Infirmary.—Jun. H.S. At rate of £130.
Lincoln County Hospital.—Matron. £225.
Liverpool, Royal Southern Hospital.—Res. Cas. O. At rate of £100. Also M.O. and Res. Anæsthetist. At rate of £60.
Liverpool School of Tropical Medicine.—Leverhulme Research Fellowship. £600.
Liverpool, Walton Hospital, Rice-lane.—Third Sen. Asst. Res. M.O. £350.
L.C.C. Infectious Hospitals Service.—Asst. M.O.'s. £250 and £350. Also H.P. At rate of £120.
Manchester, Ancoats Hospital.—H.S. At rate of £100.
Manchester, St. Mary's Hospitals.—Res. Obstet. Officer for Whitworth-street West Hospital. £175.
Margate, Royal Sea-Bathing Hospital.—H.S. At rate of £200.
Metropolitan Hospital, Kingsland-road, E.—Sen. and Jun. H.P.'s. and H.S.'s. Also Cas. O. Each at rate of £100.
Newcastle-upon-Tyne Eye Hospital, St. Mary's-place.—Hon. Ophth. Surg.
Oxford, Exeter College.—Staines Medical Research Fellowship. £400.
Port Elizabeth Provincial Hospital.—Med. Supt. £1000.
Preston, County Mental Hospital, Whittingham.—Res. Jun. Asst. M.O. £500.
Preston, High Carley Sanatorium.—Asst. Tuber. M.O. £450.
Princess Louise Kensington Hospital for Children, St. Quintin-avenue, W.—H.P. At rate of £100.
Queen Charlotte's Maternity Hospital, Marylebone-road, N.W.—Res. M.O. for Isolation Hospital. At rate of £200.
Reading, Royal Berkshire Hospital.—Vacancies. Each at rate of £125.
Rochdale Infirmary and Dispensary.—Jun. H.S. £200.
Rochester, St. Bartholomew's Hospital.—H.P. At rate of £175.
Royal Dental Hospital of London, Leicester-square, W.C.—Hon. Pathologist.
Royal Eye Hospital, St. George's-circus, S.E.—Royal Eye Hospital Research Scholarship. £100.
Royal National Orthopædic Hospital, 234, Gt. Portland-street, W.—Four Surgical Registrars. Each £105. Also Hon. Asst. Surgeon.
Royal Northern Hospital, Holloway, N.—Med. Reg. £200.
Royal Waterloo Hospital for Children and Women, Waterloo-road, S.E.—H.P. At rate of £100.
St. Helen's Hospital.—Jun. H.S. £150.
St. John's Hospital, Lewisham, S.E.—Res. H.P., and Res. Cas. O. Each at rate of £100.
St. Leonard's-on-Sea, Buchanan Hospital.—Jun. H.S. At rate of £125.
St. Mary's Hospital, W.—Cas. H.S. At rate of £100.
St. Thomas's Hospital, S.E.—Associate Plastic Surgeon. Also Res. Anæsthetist. £200.
Sheffield Radium Centre.—Asst. M.O. £400–£500.
Sheffield Royal Hospital.—Hon. Asst. Surgeon.
Shrewsbury Royal Salop Infirmary.—Cas. O. At rate of £160.
Southampton C. E.—Part-time Ear, Nose, and Throat Surgeon. At rate of £300.
Southampton Free Eye Hospital.—Hon. Ophth. Surgeon.
Southend-on-Sea General Hospital.—H.P. At rate of £100.
South Shields Education Committee.—Ear, Nose, and Throat Surgeon. At rate of £200.
Stockport Infirmary.—H.P. £150.
Taunton and Somerset Hospital.—H.S. At rate of £100.
Victoria Hospital for Children, Tite-street, Chelsea, S.W.—Hon. Surg. Reg. Also Sen. Res. M.O. £200.

The Chief Inspector of Factories announces vacant appointments for Certifying Factory Surgeons at Lerwick (Shetland), Earlston (Berwickshire), Cambuslang (Lanarkshire), and at Port Glasgow (Renfrewshire).

Births, Marriages, and Deaths

BIRTHS

AITKEN.—On Oct. 2nd, at 19, Bentinck-street, W.1, to Margaret, wife of R. S. Aitken, M.D. N.Z., M.R.C.P.—a daughter.
BROWN.—On Sept. 25th, at Dewsbury, Yorkshire, the wife of Dr. C. Metcalfe Brown, of a son.
DEVEREUX.—On Sept. 26th, at Kingsley, New Milton, the wife of C. H. Devereux, M.B., B.S. Lond., of a son.
OSBORNE.—On Sept. 25th, at The Towers, Saltash, Cornwall, the wife of Surgeon Lt.-Comdr. (D.) L. B. Osborne, R.N., of a son.
TOWNSHEND.—On Sept. 24th, at Devonshire-place, W., the wife of Maurice A. Townshend, M.B., B.S., of Arundel, of a son.

MARRIAGES

GUIRDHAM—ADDISON.—On Sept. 29th, at St. Mary, Weybridge, Arthur Guirdham, B.M., B.Ch. Oxon., of Workington, to Mary Lacy Addison, of Weybridge.
HATRICK—RUSSELL.—On Sept. 22nd, at Trinity Church, Glasgow, James Cameron Hatrick, M.D., of Surbiton, to Marah, daughter of Mr. and Mrs. Charles Russell, of Glasgow.
KNIGHT JONES—CORMACK.—At Mayfield South Church, Edinburgh, on Sept. 18th, Edward Knight Jones, son of the late Mr. J. T. Jones and Mrs. Jones, Cefn Mawr, N. Wales, to Mary Constance, daughter of Mr. and Mrs. J. Cormack, Mayfield-gardens, Edinburgh.
WOODRUFF—WHITELEY.—On Sept. 29th, at St. Paul's Church, Knightsbridge, S.W., Keith M. C. Woodruff, M.B., B.S. Lond., to Beatrice Evelyn Whiteley, only daughter of Colonel and Mrs. C. C. O. Whiteley, of Norbury.

DEATHS

ENSOR.—On Sept. 26th, at Sunny-gardens, Hendon, N.W., John William Ensor, M.R.C.S., late of Golders Green, in his 65th year.
HEYWORTH.—On Sept. 29th, suddenly, at Belper, George Alexander Frederick Heyworth, M.B. Camb.
WINDSOR-AUBREY.—On Sept. 24th, at Hale, Long Ashton Somerset, Henry Wentworth Windsor-Aubrey, M.R.C.S. Edin.
WORTHINGTON.—On Sept. 28th, at Sutherland-road, W. Ealing, Joseph Charles Worthington, M.D. Dub.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

NOTES, COMMENTS, AND ABSTRACTS

HEALTH NOTES FOR YOUNG MEN OVERSEAS

At the request of the British Social Hygiene Council, Dr. Drummond Shiels, its medical secretary, has written a little booklet for young men going overseas. It contains a graphic description of the origin, course, and treatment of syphilis and gonorrhœa, with a frank statement of what is called the "disinfection controversy," and concludes with an admirable section on sex and personal conduct. This contains the suggestion that however hard may be the circumstances it would seem wise and expedient for the young man in the merchant shipping service, or in tea, coffee or rubber cultivation, to wait for the time when the sex impulse can be expressed in a marriage of affection, without the deceit, anxiety, and danger of non-marital relations. At the same time it is pointed out to employers that everything possible should be done to see that marriage at a reasonable age is made easier than it is to-day. The booklet has been prepared on the lines of one on malaria issued by the Ross Institute, the cover being water and insect proof. Copies may be obtained from the Council, Carteret House, Carteret-street, London, S.W. 1, at 4*d*. each.

DRUG ADDICTION

Sir Malcolm Delevingne, late of the Home Office, who has for 14 years served on an advisory committee of the League of Nations, delivered on Tuesday last the fifteenth Norman Kerr memorial lecture, taking as his subject some international aspects of the problem of drug addiction. It was the administrative rather than the medical side of the problem with which he was concerned; his presence at the international conferences in 1924–25 and in 1931, and his contributions to the conventions in which they resulted, clothe his words with authority. He dismisses the questions of opium-smoking and opium-production as having nothing to do with his subject, although the failure to grapple with these aspects of the problem led to the withdrawal of the American and Chinese delegations from the conferences of 1924–25. He also holds that "the practice of opium eating in India, though this has its quasi-medical side, is not to be regarded always or even usually as a form of addiction and nothing else." Drug addiction he regards as "at bottom a matter of drug supply." Even as recently as 1927–28, and in spite of treaty obligations, some 3000 kilos of heroin were exported from Holland mostly to the Far East; and in 1926–29 6414 kilos of heroin and 943 kilos of morphine were exported by a French firm—the whole or the great bulk of which went into illicit traffic. Not even all important European countries, Sir Malcolm drily remarks, take a strict view of their obligations under an international convention and of their responsibility for giving its provisions effective enforcement. He is led to conclude that an enormous improvement has been effected through the operations of the League of Nations; nevertheless the illicit traffic still continues to flourish, new clandestine factories threaten the gravest possibilities, and the recent discovery that morphine can be extracted from poppy straw opens up a new situation. Figures prepared by the League secretariat appear to show that in the six years 1925 to 1930 not less than 72 tons of morphine in various forms escaped into the illicit traffic. While surveying with satisfaction the work of the last 14 years, Sir Malcolm is perhaps a little slighting in his reference to the earlier international work of the Hague conferences of 1911–14. Yet the Hague Convention of 1912 laid the basis for all subsequent developments; it cut new ground in international law, and laid the foundation for the principal Dangerous Drugs Act of 1920 in Great Britain. That Act was stated on its introduction in the Commons to have for its object the effectuation of the Hague Convention of 1912, and so bring under control throughout the world the traffic in opium and cocaine and the preparations derived from them, and to restrict their use to medical and other legitimate purposes. It would have been well if all other parties to the Opium Convention had followed the example of Great Britain in the legislative and administrative interpretations thus given to the obligations nationally entered into. Sir Malcolm concludes that there is a long way yet to go, and that the end is not even in sight. Indeed, as he justly remarks, the production of the raw material is not yet subject to any effective control under the conventions, and as long as the output of raw opium largely exceeds all requirements for legitimate purposes, smuggling will continue. Those who would like to follow more closely the medical side of the same problem should turn to an article in the *Contemporary Review* for October by Sir William Collins.

MEAT INSPECTION AND HYGIENE

THE enforcement of regulations designed to ensure that meat offered for sale is in a proper condition for human consumption is one of the satisfactory developments of public health organisation. Two volumes recently published adequately represent modern practice. Ostertag's Handbook of Meat Inspection has long been held in high repute as the work of a great authority on the subject. It has now been replaced by a text-book[1] of which the authorised English translation has been edited by Mr. T. D. Young, who, from his wide experience, has added information useful to English readers, mainly as footnotes, and an additional chapter on Poultry has also been supplied. The earlier chapters deal with the characteristics of food animals, the examination of animals before slaughter, and abattoirs and methods of slaughter. The chapter on the procedure in meat inspection is very clear, and stress is laid upon the importance of making examinations in a definite order. The many drawings illustrating the position of the lymph glands, and the emphasis laid on the need for their careful inspection, are particularly useful; the table of advice on acceptance or rejection of the meat according to the glands affected is perhaps rather more precise than is warranted by English practice. The greater part of the text is taken up with details of the pathological conditions which may be found and their significance, animal and vegetable parasites, intoxications and auto-intoxications, and physiological conditions of importance in meat inspection. All these sections are clear, detailed, and authoritative.

Meat poisoning is dealt with in great detail. On the bacteriological side this will be found somewhat confusing to English readers as some of the statements made are not in accord with our experience, and representing older German views which are being largely abandoned in this country. For example, both *B. aertrycke* and *B. enteritidis* are held to be normal intestinal inhabitants of rats and mice, and also of the food animal, while *B. paratyphosus* B is given as a common cause of food poisoning in one place and excluded in another. Agglutination and other laboratory tests for assisting diagnosis are discussed in detail. Another subject dealt with in more detail than is usual in such text-books is putrefaction, both the chemical and bacteriological changes being well described; an account of tests for putrefaction is supplied, which is useful on the whole, although Eber's very unsatisfactory test is retained

[1] Ostertag's Text-book of Meat Inspection, including the Veterinary Control of Meat and Meat Products. Edited by T. Dunlop Young, O.B.E., M.R.C.V.S., D.V.S.M., F.R.S.I., Veterinary Inspector for the City of London. Translated by C. F. Marshall, M.D. London: Baillière, Tindall and Cox. 1934. Pp. 743. 45*s*.

and several newer ones are omitted. Putrescent meat is definitely stated to be injurious to human health, though no real evidence for the statement is quoted. The completeness of the laboratory and scientific details given is well exemplified in the chapter dealing with the various methods used for the preservation of meat. These are not only described in detail but the chemical and bacteriological data upon which their value rests are fully discussed.

The volume is well illustrated, and nearly all the figures are helpful. The translation is good, and the book will be found of great service as a practical working guide and as a reference volume to all persons interested in meat control and supervision.

The scientific and laboratory sides of meat hygiene are well set out in a book from American sources.[1] As a guide to the practical meat inspector in this country it is not very useful, since the regulations which are quoted in great detail refer to the practice and law in the United States, and differ from those effective here. The sections on the abnormal conditions met with in meat inspection are comprehensive, and include peculiarities within physiological limits—i.e., immaturity, emaciation, abnormal fat coloration, general pathological changes, parasitic diseases, infectious diseases in food-producing animals, and insects on meat. These provide valuable sections for purposes of reference. The part dealing with the putrefaction of meat is rather poor, and fails to give an accurate account of the bacterial sequence of changes, while the proposed tests do not include some recent tests. In some respects the section on food poisoning is not up to date, and remarks that meat poisoning is usually associated with ante-mortem infection of the animal, and that proteus and *B. coli* are fairly frequent causes of food poisoning are not in accord with experience. The volume is perhaps most useful in regard to processes ancillary to actual meat supervision, and such subjects as the various methods of conserving meat, the disposal of diseased carcasses and parts, sausage making, and the manufacture of lard are discussed in considerable detail. Sections are also included on the morphology and chemistry of the tissues and organs, ante-mortem inspection of food animals, and the chemical analysis of meat food products.

HOSPITAL ECONOMIES

IT is difficult to make any useful comparison between the organisations of hospitals in different countries, since the conditions of administration and of finance vary so widely. It is even more difficult for persons interested in hospitals in one country to assess the value of the reforms advocated by the experts for another country. These reflections arise from examination of a little book[2] which is a sincere attempt to help hospitals in the United States, that have been hard hit during the recent financial crisis, to put their house in order. Many of the practices recommended in this book as reforms have already been in force here for many years; others have been examined and discarded as unsuitable. In the past, in America, hospitals have been chiefly supported by generous individual benefactors, and also in later years by the collection of money on strictly business lines, both from the general public and from patients. Although patients are assessed according to their means in many hospitals in England, and in others are invited to contribute as much as they can afford to the hospital funds, this system is evidently not pursued in anything like so exacting a manner as in the United States. Many of the sick poor, however, are not in a position to pay anything, and the tradition that it is improper even to discuss finance with them in their time of distress is one of the most cherished traditions of the voluntary system. If the recommendations made in this book were enforced, few hospital patients would be able to escape without payment for services rendered; on the other hand, the indignation aroused by such tactics on the part of over-zealous hospital officials would be the surest way of cutting off subscriptions, and the last state would be worse than the first. Mr. Reeve and Mr. Cleveland have certainly explored most thoroughly the possibilities for effecting economies in hospitals, and to those administrators who have not previously had to examine every source of leakage their suggestions should prove of real value.

[1] Text-book of Meat Hygiene. Sixth revised edition. By Richard Edelmann, Ph.D., John R. Mohler, A.M., V.M.D., D.Sc., and Adolph Eichhorn, D.V.S. London: J. and A. Churchill. 1934. Pp. 474. 28s.

[2] Hospital Economies: One Hundred Practical Suggestions for Private and Community Hospitals. By Archie F. Reeve, C.P.A., and Hayward Cleveland, Hospital Economist. London: H. K. Lewis and Co., Ltd., 1934.

Messrs. SHARP & DOHME, LTD., the Mulford Biological Laboratories, have moved from Regent-street, and their address will henceforth be 76-78, City-road, London, E.C.1. (Tel.: Clerkenwell 7661.)

WHO IS IT?—Dr. C. L. Batteson writes: "Perhaps an examination of the painting by infra-red rays may bring out the escutcheon sufficiently clearly to help in identification."

WE have received from Messrs. Boutalls Ltd., of 150, Southampton-row, London, a sample of a preparation known as Queen Face Powder which they recommend specially for use by patients with hypersensitive skins. They state that the powder contains no orris root or oil, or any other irritant which is likely to produce allergic symptoms in hypersensitive patients. Other cosmetic preparations for which the same virtues are claimed are marketed by this firm, and may well serve the need of women patients whose ordinary cosmetics are suspected of irritant properties.

A NOTTINGHAM NURSES' HOME.—A new staff home at the Nottingham City Institute at Bacthorpe has just been opened. It consists of a two-storey building placed around three sides of a grass courtyard with flower beds. There are 58 bedrooms and extensive other domestic accommodation, and much space will be gained for the accommodation of patients. The provision for the nursing staff was described as having been hitherto "of a most inadequate character."

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED SEPT. 22ND, 1934

Notifications.—The following cases of infectious disease were notified during the week: Small-pox, 0; scarlet fever, 2852; diphtheria, 1416; enteric fever, 32; acute pneumonia (primary or influenzal), 551; puerperal fever, 32; puerperal pyrexia 89; cerebro-spinal fever, 12; acute poliomyelitis, 26; acute polio-encephalitis, 3; encephalitis lethargica, 7; dysentery, 16; ophthalmia neonatorum, 89. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on Oct. 1st–2nd was as follows: Small-pox, 0; scarlet fever, 1569; diphtheria, 1537; measles, 264; whooping-cough, 265; puerperal fever, 32 mothers (plus 11 babies); encephalitis lethargica, 270; poliomyelitis, 7; "other diseases," 254. At St. Margaret's Hospital there were 22 babies (plus 11 mothers) with ophthalmia neonatorum.

Deaths.—In 121 great towns, including London, there was no death from small-pox or enteric fever, 6 (0) from measles, 5 (0) from scarlet fever, 10 (4) from whooping-cough, 37 (7) from diphtheria, 60 (16) from diarrhœa and enteritis under two years, and 19 (1) from influenza. The figures in parentheses are those for London itself.

Fatal cases of diphtheria occurred at Birmingham 4, Warrington 3, Leeds, Liverpool, Wolverhampton each 2. Birmingham reported 9 deaths from diarrhœa, Liverpool 5, Manchester 4, no other great town more than 2.

The number of stillbirths notified during the week was 241 (corresponding to a rate of 40 per 1000 total births), including 39 in London.